EDITORIAL
DOMESTIC ENGINEERING

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KNOW YOUR GOODS.

THE great philosopher Plato is credited with the famous saying, "Man, know thyself." Expressions of this character live for ages and attain general usage because they roll very smoothly off the tongue, and also because they state a truth or give a sound bit of advice in a simple and terse form. It is an excellent thing for people to reflect occasionally on their own capabilities, weaknesses, accomplishments, or lack of accomplishments; in a sense to take a personal inventory and make some attempt to see themselves as other see them. It is, indeed, a very sensible thing to do. But, since this is an age of commercialism, an age of business, big and small, Plato's time-honored saying might be made to read, "Man, know thy goods."

There are firms, and among them some who have enjoyed a rather liberal measure of success, whose policy it is to tell their salesmen and dealers as little as possible about the history and the manufacturing of their goods. They depend to a great extent for marketing their goods on sales talks designed to have a strong psychological effect and on other sales effort considered highly scientific. Many depend on the kind of salesmanship that will sell palm beach suits to Eskimos or a $10,000 car to a $30.00 per week man. Some salesmen are credited with the ability to do just such things. But is this the wisest thing to do? Would it not be better for the salesman and the dealer in particular to know and be able to discuss intelligently the goods that he handles from the raw product to the finished article?

How many people have even the slightest conception of the many steps involved in the making of a modern closet combination, the many parts, the processes and tests involved, and the materials used? Decidedly very few. All this only serves to convince a great many people that the price charged for such an article is exorbitant and far out of proportion to its actual cost. Many a person who has bought modern plumbing fixtures has felt that he has paid an unfair price simply because he did not have the slightest idea of the cost of manufacturing the articles in the first place, and as a result he immediately joins the ranks of those who are prejudiced against the plumber; whereas, if he had been informed at the time regarding what went into the making of the fixtures in the way of labor, material, and time, it is quite likely that he would recognize the fact that he was only paying a fair price. It might also remove from his mind any prejudice he might have against the plumbing business and cause him to change the views of some of his friends who might be making unfair criticisms of the plumbing and heating contractors and their business.

For a salesman or dealer, who knows little or nothing about the article he sells, to be able to sell that article may be considered excellent scientific salesmanship, but it would seem wiser for the salesman or dealer to know his own goods from every angle, and then after studying the customer's requirements sell him that which he needs, at the same time showing him just why he should have that kind of an article, explaining something about how it is made and the materials, labor, and time required in the making, and just why it is superior to something else for his particular purpose. This is not always possible, but if it was done at every opportunity, it should prove a big help in dispelling the popular misconceptions of the plumber and also act as a stimulant to the plumbing and heating business in general.

BUILD HEATING BUSINESS NOW.

THIS is an excellent time to circularize your mailing list of heating prospects, for those whose heating systems are inefficient are either experiencing considerable discomfort during this cold weather, or are dissatisfied with the size of their coal bill, and, therefore, they are more likely to be interested in having the system repaired or changed entirely; but if they are not approached on the subject until summer they are quite likely to have forgotten the discomforts and coal bills of the winter and be inclined to postpone making any changes until it is again too late. The circulars should be so arranged that the recipient's attention is called immediately either to the importance of having sufficient heat, or to the size of coal bills and the necessity of having a heating system that delivers the maximum amount of heat from the fuel used.

There are a great many people who have had furnaces or other heating systems installed that serve quite well in mild weather, but which are entirely inadequate during the severely cold weather of midwinter. Some of these people decide during each cold spell that before another year rolls around they are going to have a new heating system put in, but because no one in the heating business approaches them during the time they feel the need the most and contracts with them to make the changes, they worry through the cold weather some way and then forget about the heating system during the remainder of the year. Get to them now and make definite arrangements for remodeling or repairing their present system or providing them with a new one while the matter is still fresh in their minds.

EXPANSION TANK CONNECTIONS

Several Methods of Connecting Expansion Tanks, All Conforming to Good Practice and Operating Successfully

By James Mackay

THE function of the expansion tank is too well known to need further explanation here. There are shown, however, several methods of connecting tanks that all conform to good practice, and that enable the more complete and convenient operation of the system.

The usual method of connecting the expansion tank is to take a connection off one of the return risers, similar to that shown in Fig. 1, placing the expansion tank well above the highest radiator, connecting to the bottom of the tank, and providing an overflow connection for the escape of surplus water due to expansion or the boiling of the water in the system; and, in order to prevent the system syphoning out when it is overflowing, a vent connection is placed at the extreme top which lets in air as soon as a suction is established by the downward moving current of water in the overflow. Two errors of construction that are widespread may be pointed out here; one is the very frequent practice of extending the vent connection out the roof, and the other running the overflow pipe to some convenient toilet fixture near the tank, or out to the roof. If the vent or the overflow is carried out to the atmosphere it is very apt to cause serious damage to the boiler by the blocking up of the exit, due to freezing of water in the pipe.

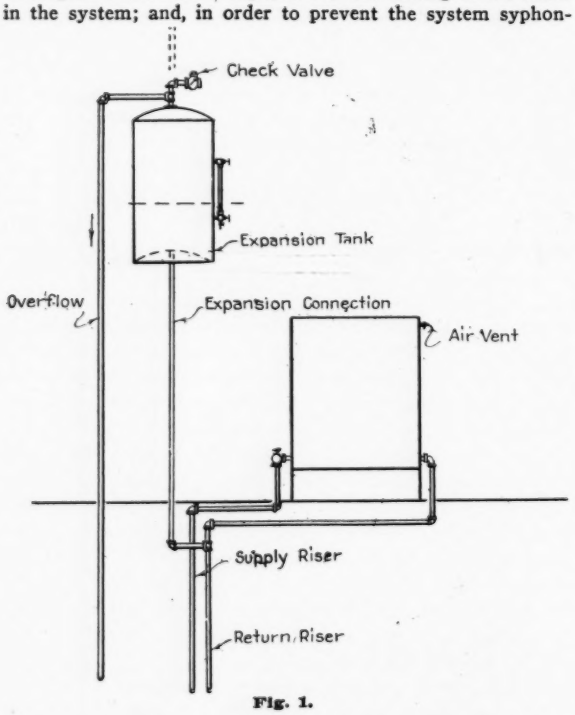


Fig. 1.

The connections shown in Fig. 1 are an improvement on these methods. Instead of the vertical vent pipe to the roof (shown in dotted lines in the drawing), the use of a check valve of the "swing" type, with the gate opening inwards serves the purpose fully and serves it better. This will prevent water escaping when the system is boiling violently, and will open instantly to admit air, if the system begins to syphon. The overflow pipe indicated should always be carried down to the basement, and discharged near a floor drain, above the floor line, so that if the water supply valve is defective, or is not fully closed, the escape of water will be noted. The size of the expansion tank connections need not be large; ¾-inch for the expansion and ¾-inch for the overflow is sufficient for jobs up to 1,000 ft., with an increase of one size of pipe for each 1,000 ft. added, up to 5,000 ft., which may be 2-inch, and an increase of one size every 2,500 ft. above that. The size of the check valve on the syphon-breaker may be ½-inch for small jobs, and one half the diameter of the expansion and overflow pipe for larger jobs; that is, a 2-inch expansion line would have a 2-inch overflow and a 1-inch swing check valve.

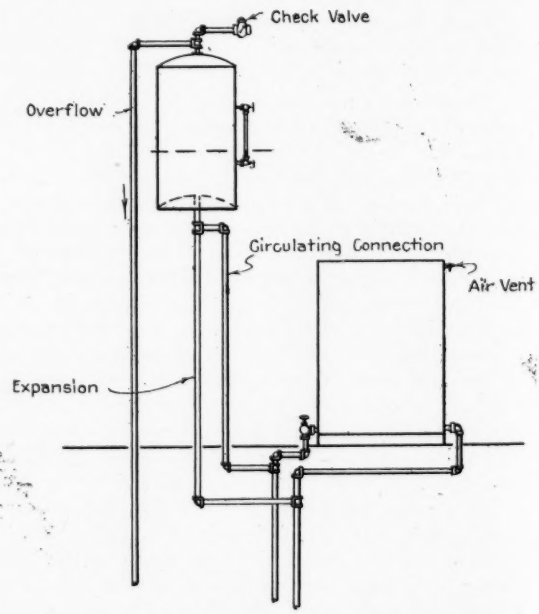


Fig. 2.

If the expansion tank is located in an unheated room, or unheated attic space, it should be given a good insulating covering, and should also be given a circulating connection to prevent the water in the tank from freezing. This may be made as shown in Fig. 2, which will usually provide a sufficient amount of heated water for the purpose, or the supply connection may be connected directly to the tank, at an opening on the side, and as near the bottom as possible.

An automatic water feeder is a very desirable addition

to a hot water heating system, as the water is constantly maintained at the desired level in the tank without attention. This is especially convenient when the radiators below are periodically vented. The connections for such an arrangement are shown in Fig. 3. Four gate valves, "A," "B," "C" and "D" are shown, the first three being by-pass valves; valve "A" is normally closed; valves "B," "C" and "D" are normally open, these latter three being closed if the feeder is disconnected for examination or repair, and the system fed directly through valve "A." The line on which valve "D" is located is an equalizing connection, and by its use the water-line in the tank is governed.

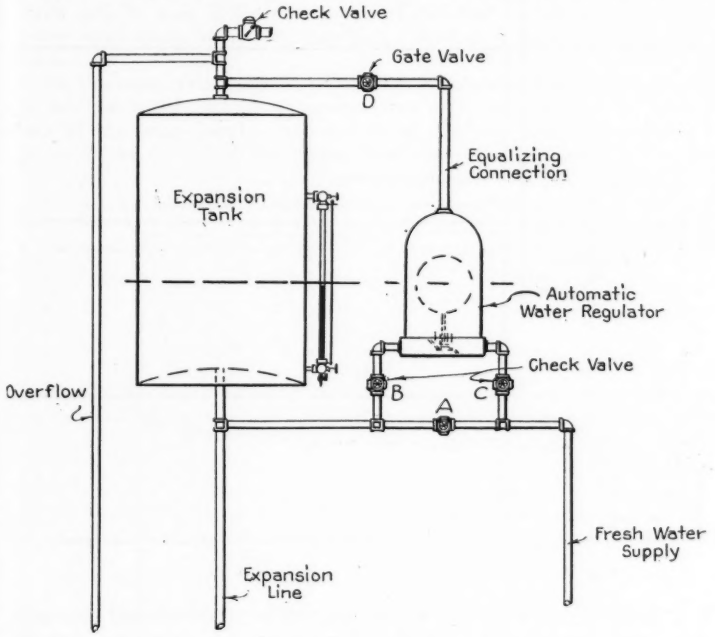


Fig. 3.

The same arrangement for feeding water is shown in Fig. 4, but without the automatic water feeding device. This method should always be used, if the system is fed by a pump directly from a well or cistern, as by making the connection in this manner, the air which is entrained in the water escapes directly out the overflow.

If the connection is made directly to the boiler, the incoming air forces a great deal of water out of the system. But even with a supply of water entirely free of air, and connected to the boiler, it is very convenient to have the additional connection at the expansion tank as shown in Fig. 4. By having the double connection, the system may

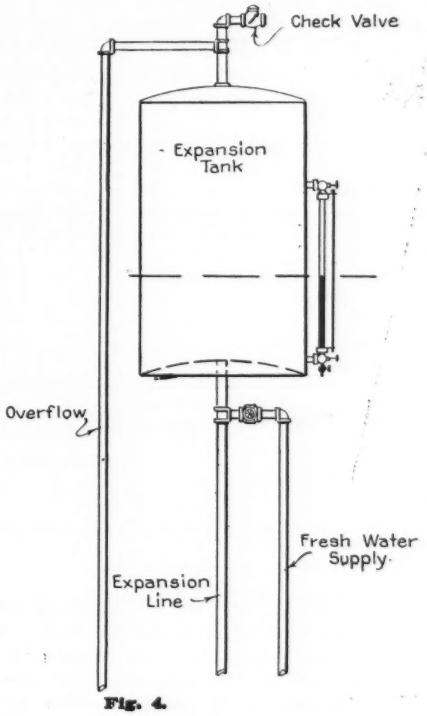


Fig. 4.

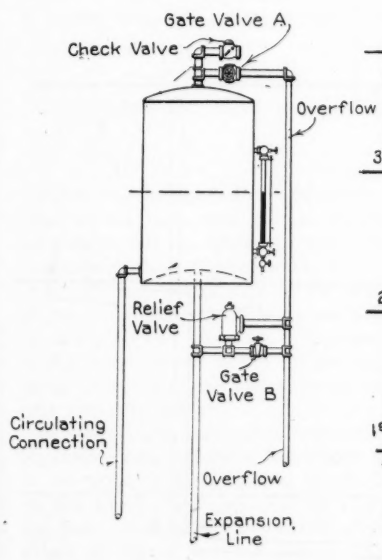


Fig. 5.

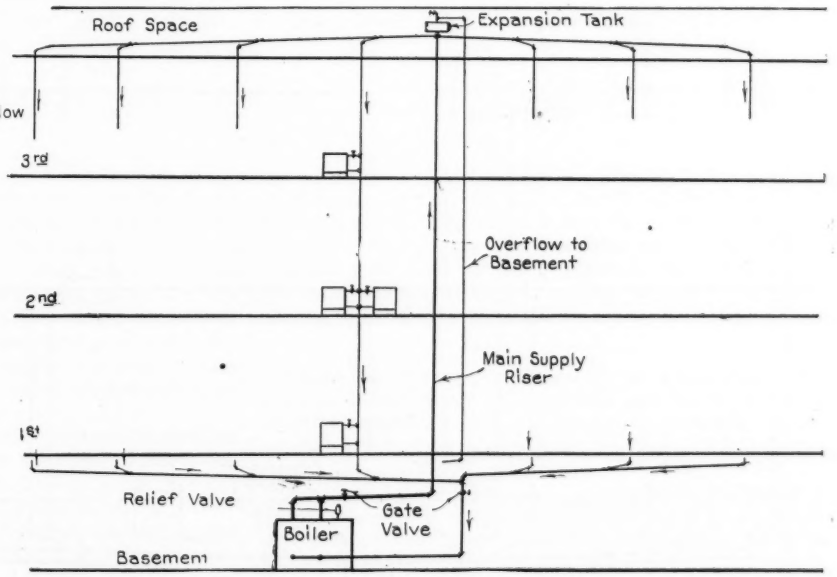


Fig. 6.

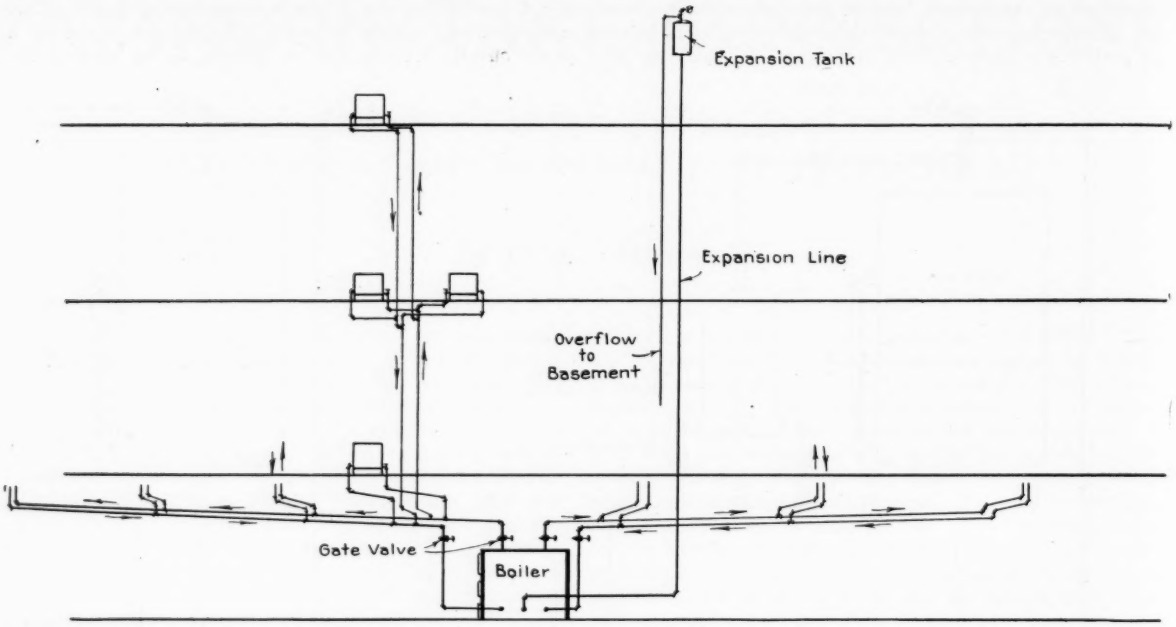


Fig. 7.

be filled from below, using the altitude gauge as a guide, or it may be filled from the top floor. When first filling a hot water system, the water supply valve is turned on, and the vent on each radiator opened separately, and each closed in turn as the radiator is filled with water. When the radiators on the top floor are filled, the water is allowed to appear an inch or two in the gauge glass, and then shut off. It is, therefore, very handy to fill the system from the top, and be able to cut it off at the instant desired, and not have to run back and forth all the way to the basement to operate the feed valve.

A method of making connections for a closed system is shown in Fig. 5. A relief valve is shown, and two gate valves—"A" and "B." Both of the gate valves are normally closed, and water can escape only by overcoming the spring (or other resistance) of the relief valve. It is thus possible to carry a water temperature higher than the ordinary atmospheric boiling point, without boiling the water. Gate valve "A" is only opened when water is being added to the system, when the excess air escapes out the overflow. At other times it remains closed and the air in the tank acts as a cushion, unless the relief valve should be out of order or for any other reason it might be desired to operate the plant as an "open" system, when the gate valve "A"

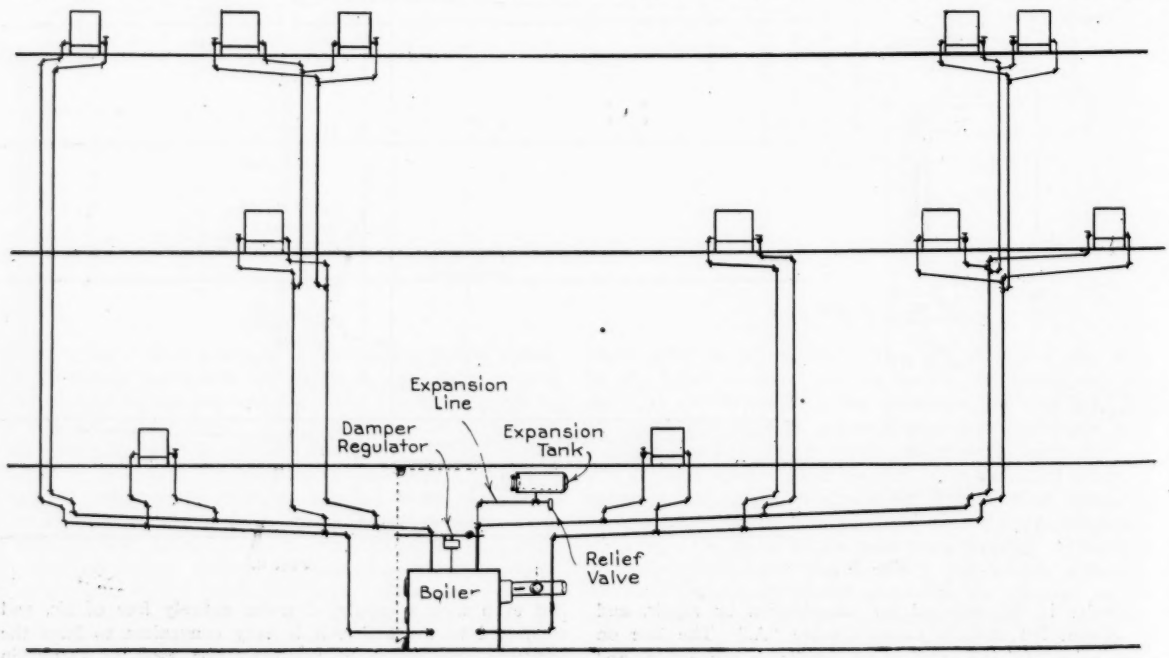


Fig. 8.

would be open. Gate valve "B" also leads to the overflow, and its purpose is to permit discharging excess water from the tank, so as to maintain any desired level.

A circulating connection is also shown, leading to a lower opening on the side of the tank; this is optional, and need only be used if there is danger of freezing. A direct water connection, similar to that shown in Fig. 4, may, of course, also be used.

An overhead system, also having valves, is shown in Fig. 6. It will be noted that the expansion tank is located at the top of the main supply riser, and is at the very highest point of the system, all the piping from that point pitching back to the boiler. All air therefore escapes up the piping lines to the tank, and out the overflow, and all vent and air valves may be dispensed with, as each heating unit is vented out through the supply connection, which is made to the top end section nearest the riser. The return connects to the same riser, and may be made from either the nearest or farthest end. In order to prevent damage to the boiler in the event of the valves on the supply and return mains being both closed, a relief valve is placed on the boiler, inside the gate valves.

If desired, the relief valve may be omitted, and a separate expansion line run from the return openings of the boiler to the tank, it being placed at the highest point, but not on the supply riser, and an air trap placed at the top of the latter instead, in a manner somewhat similar to that shown in Fig. 7 and the trap in Fig. 9, described further on, but the method shown in Fig. 6 is preferable.

A basement feed, open type gravity system is shown in Fig. 7, having all supply and return connections at the boiler provided with valves, and a separate expansion tank line run from the return opening at the boiler to the expansion tank, which is connected up in the usual manner. But valves of any kind that could cut off the expansion should be omitted in any connection like this.

A "Tank in the Basement," up-feed system is shown in Fig. 8. These systems have many advantages in addition to avoiding the placing of the tank in the upper floor. By reason of being a "closed" system, a smaller amount of radiation may be used, and smaller piping, and there is in addition, the great advantage of being able to use the force of compression generated by the expansion of the water, to operate the dampers so as to maintain a constant temperature of the water.

The same method applied to an overhead job is shown in Fig. 9. In this, all of the piping grades back to the boiler, and the high point at the top of the main supply riser is vented by means of a float-type air trap, which remains open until all air is expelled, and closes by the raising of the float when water enters the trap. The system thus automatically vents at all times.

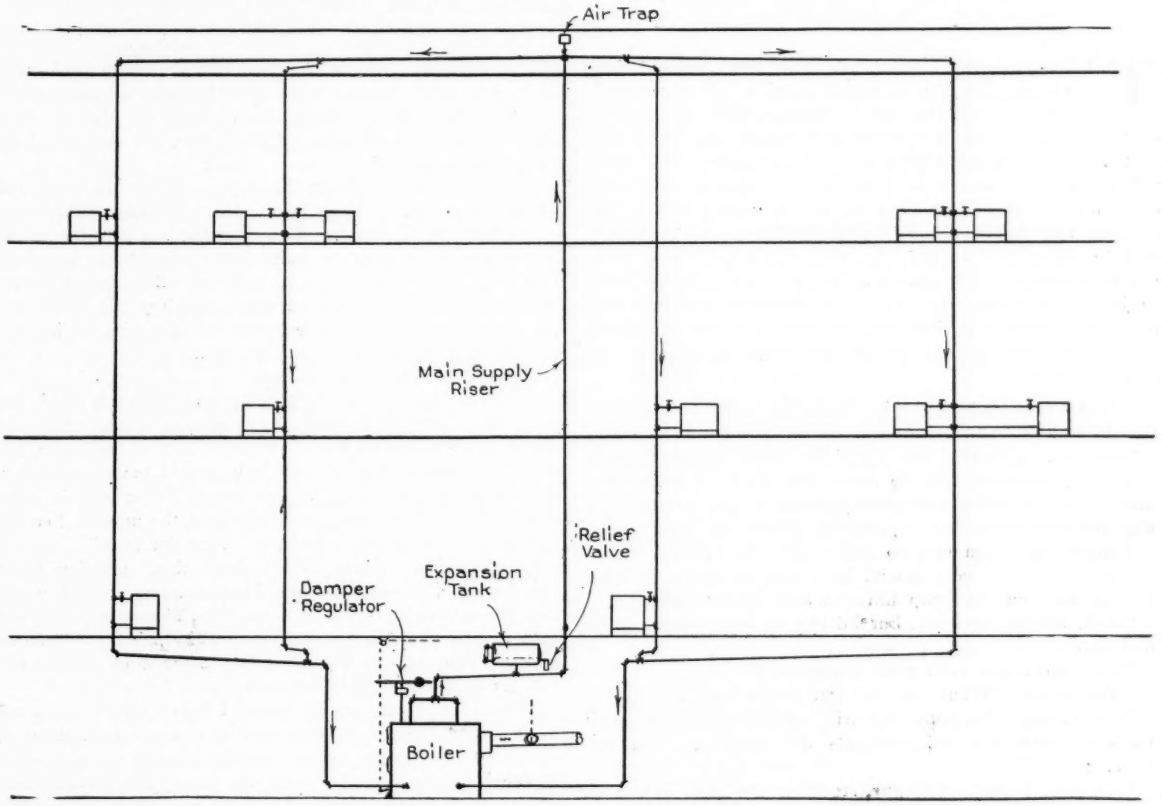


Fig. 9.

Under the Disarmament Treaty the three great naval powers—United States, Great Britain and Japan—will scrap 68 great capital ships of a total tonnage of 1,861,643. Smaller number of old ships to be scraped by France and Italy contribute to make these figures higher.

The Public Debt Increased approximately $50,000,000 in January, according to figures announced today by the Treasury, which showed the public debt on January 31, to be $23,388,544,236, as compared with $23,438,984,351 on December 31.

Middletown, Conn.—Bacon Bros., 345 Main Street, have secured the plumbing and heating contracts on the Middlesex hospital building.

PICKING PROSPECTS *from the* DAILY PAPER

The "Silent Partner", an Editor, in the Crescent Plumbing Co., Picks Prospects from Ordinary News Items in the Local Newspaper

By J. H. Bryan

THE new partner in the plumbing establishment was an editor. He was supposed to be a "silent partner" but he sure did talk out in meetin' when the conferences were held. He could not understand why the Crescent Plumbing establishment did not advertise. He could not see any difference in plumbing merchandise and any other kind of merchandise so far as the selling end of the business was concerned. And it was because of his insistence that the other part of the firm, who was a good workman, but no salesman, had agreed to put a solicitor in the field to hustle up some business. The aforesaid solicitor had brought in some good business, but had "run out," in about sixty days, and was now on the defensive, in the presence of his employers.

"Oh, I can get the orders, all right, when I find a prospect. But I run out of prospects," he declared.

"Oh, yes. You can *take* the order when the man pokes it at you. Anybody can do that. But what we want, is a man who can *sell* some plumbing—some one who knows that the man wants some plumbing before the man knows it himself, and then can go and make him see it. There are plenty of prospects around here, and we ought to keep George here on the jump filling orders all the time."

"Well, maybe there are, but I'd like to know where you'd find them."

"Why don't you read your newspaper?"

"Newspaper? What has that got to do with it?"

"Everything. Anybody that will read his newspaper with his eyes open can find prospects for anything. Did you never try it?"

"No, and I don't take any stock in the idea, either. I have just read your paper through and through, want ads and all, and if there is a single suggestion that will lead to a prospect, I did not find it."

"That is because you do not know a prospect when you see one. Here, hand me the paper, and if I don't find you a dozen in that one issue, I'll say that there is not a prospect in town, and give you a month's vacation on full pay."

"Me for the vacation. But here is the paper."

"All right. Here is the first one. John Brown is to rebuild his house that was burned last week. There is your prospect. He is going to make it pretty nice, judging from what this item says. Of course, he ought to have modern plumbing throughout. I guess he does not know it, but you do, and if you can not make him see the light, you are no salesman."

"Well, I guess that is a prospect. But when I asked him if he did not want some plumbing done in his house, he said he guessed he didn't."

"Of course, he said so; and you did not know enough to tell him just what he did want, and make him see it. Did you tell him all about the modern fixtures that we have on display and explain the advantages of having the very latest in his new house?"

"N-o-o, I didn't."

"Well, how did you expect him to know about it, if you did not tell him? Did you expect him to dream it—have a vision, and come rushing down with the order all made out?"

"No, I just did not think much about it. But I see it now. I'll get him all right. That is one; but that is a long way from a dozen."

"Don't you worry about the dozen. They are here, and we will find them. Here is another. Tommy Adkins has a new baby at his house. Now Tommy is a sensible young fellow, and he is great on up-to-date appliances in his shop. You can't make me believe he will buy all those labor saving devices for his help, and would not buy the labor saving devices we sell for the home for his wife, if he was told about them. Have you seen him?"

"No, but I will. That is two."

"Yes, and here is the third. Old Mrs. Sallee is dead, you see. Well, her girls went to the normal school and each one of them knows all about running water in the house, and about sanitation. But the old lady would never consent to have any changes made in the house. Now she is gone, there is no one to object, and they have the money. See it?"

"Sure. That ought to be easy. Now for four."

"Well, wait a minute. How about this. Charley Green has bought the equity in the Hardin house. That means that the wedding is soon to come off. That is a pretty nice little house, but it is not modern. Why don't you go over and get Papa Strong to make Mary a wedding present of a full set of modern plumbing in her new house?"

"Fine idea. I can swing that. I heard him make a talk at the 'good citizens' meeting, and he was going on about the necessity of making good citizens of our women—good healthy citizens—and he made the finest talk on sanitation I have ever heard. That sale is already made. Next?"

"Well, I believe you *will* be able to recognize a prospect when you see one if you keep on improving. Let's look at the 'For Sale' column. Maybe we will find a pointer there. Here it is. Mary Caruthers has had that Monroe Street property on sale now for six months, and she can not get rid of it. I see she has just reduced it again. Says that nobody wants it because it is not modern. That Herron house sold last week for $1,000 more than Mary is asking for hers. If hers was modern, she could add what it would cost her to fix it up, and then another $1,000, and still have a better bargain than the Herron house. Go see her, and get her to modernize. I'll guarantee her a sale, if she will."

"I get you. We can tell her about that Thompson house, that we fixed up, and that was sold before we got more than half through with it."

"That's right. What was it you said about Dick Swindler at our last meeting? That he would not put in those fixtures until he got the money? Well, he has it now—just sold that car of his, that he had no business in the world with, as he had another; and his wife could not, or would not touch. Go nail him, before somebody else gets the money."

"Will see him tomorrow before breakfast. We are getting along fine. How many prospects is it we have? Let's see. One, two, four, six. Half of them. What's next?"

"Here it is. Captain Cuttle and his wife are to have their golden wedding next month. Tom was talking just the other day about what would be a suitable present for the children to join in and give the old folks—something that they would appreciate, and that would add to their comfort during their declining years. Any prospect there?"

"You bet you. My, how those old folks would enjoy a tub, and an indoor toilet, and running hot and cold water, and a sink in the kitchen. What?"

"You have it. Better see Tom tomorrow, before he gets some little dinky thing that won't amount to anything in the way of comfort for them. Here is the next one. Colonel Stanley has hired an expert, and is going to run his farm on a strictly scientific basis. Do you know what that means to the plumber?"

"Not exactly, but I have a notion that it ought to run into thousands, anyhow. I'll find out, all right. Watch me."

"I'll watch you, and I have a notion that this job ought to lead to a good many others of the same kind. But here is a chance for another. The Parent-Teachers are raising some row about the old schoolhouse in the Second Ward. There is not the ghost of a show of getting this town to build another one, because the leaders are in for the new High school, and for the use of the present school building for the grades. In the meantime, they have to have some more room. Suppose you go and make an estimate on how much we can fix up the plumbing in the old house, and get Tom Hicks to make an estimate on the painting, and the Badger Company to make an estimate on the carpenter work, and the three of you go to the board, and get them to fix it up. Would not that be an easy way to work up a job for us."

"Nothing easier, and I think we can put it over."

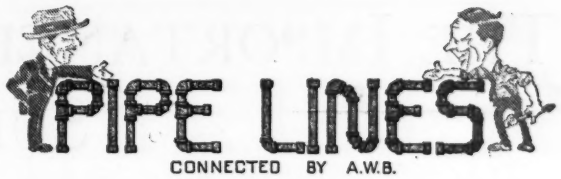
"I am sure you can, and you will be keeping peace in the community family at the same time. I see here that old Jobkins has just let loose of enough of his cash to get his daughter a piano. Why can we not get him to let loose of some of it to get his wife a sink, and a bath for his widowed daughter who has just come to live with him. He used to think that the sun rose and set in her. He would do it, if he thought about it. Up to you, isn't it?"

"Guess it is. I'll get him on one of those deals, anyhow. That is ten. About run out? Maybe I'll get that month off, yet. But with all these prospects, and a paper coming out every week, I had better stick to the job."

"No, you will not get your vacation on me, for here are the other two. But we may have to lay you off, pretty soon, in order for the mechanical end of the institution to have a chance to catch up with the selling end. This notice of Smith, Brockman & Smith to the effect that they will have a clearance sale, to make room for the workmen to remodel their store room. They are not going to get by with that remodeling stunt without some modern plumbing, are they. That's eleven, and here is the twelfth. Major Sam Campbell has just bought a monthly income insurance policy for his daughter, which will give her a regular monthly income as long as she lives. That is fine, of course, but he is well able to buy now the modern plumbing for the old mansion in which he lives, and thus secure the comfort which it would afford not only for her after he has gone, but for himself while he lives."

"All right, Captain. I am convinced, and I will say that the little old local paper is the best prospect finder in the world. But it took the Captain's knowledge of the community to interpret the items."

"That is so, and yet it is a matter more of the habit of looking for prospects and the knowing how to fit your goods and service into the needs of the people, than anything else. But you will learn. Practice, you know—practice."



MY VALENTINE.

Once, I remember, years ago,
I sent a little valentine.
I was a 'prentice then, you know;
The master's daughter's name was Doe;
I know it caused a deal of woe;
The master swore and threatened so
When I sent that little valentine.

Then, I remember, years ago,
I stole a little valentine.
The master swore and threatened so;
But what cared we for all his woe;
I am a master now, you know;
And I have dough, and also Doe,
Who was and is my valentine.

J. W. B., Chicago.

DOES HE WIN THE SMOKE?

I would suggest that "Curiosity" connect the loops of the P's in Pipe Lines by using right and left nipples for the horizontal pieces and right and left elbows in the loopty loop part of the P's.

CURRICULUM, Kirksville, Mo.

Ashes to ashes and dust to dust; if the trucks don't get you, the flivvers must. B. C., Akron, Ohio.

THE REASON FOR SATURDAY NIGHT.

(From "Little Benny's Note Book," by Lee Pape.)

There is a word in every language that means Saturday, thus proving there is never any excuse for not taking a bath.

APPROPRIATE MOTTOES.

Our relatives are wished on us, but thank heaven we can choose our own plumber.

SOMEBODY'S STENOG, Wilmington, Del.

Isn't it about time for the annual crop of income tax jokes?

FELIX, New York.

REAL ROUGH.

"I comes from a rough family, I does. My father's so rough he cleans his teeth with a steel brush an' cuts his fingernails with a axe."

"Calls dat rough, does you? Why, man, dat ain't nothin'. My father's so rough he shaves off his whiskers twice a week with a blow torch." T. B. L., Baltimore.

THE BEACHNUT.

Lady at phone: Can you turn on the water?
Plumber: Yes'm, and float and sink too.

R. F. W., Morrisonville, Ill.

IT ALL DEPENDS UPON HOW YOU LOOK AT IT.

Three men were working on a building. The first said, "I'm working for eight dollars a day." The second said, "I'm trying to make these connections." The third said, "I'm building a cathedral." C. R., New Haven, Conn.

Which reminds me that Harry Lauder says, "All the world needs to put it right is to be contented with its work."

Hotel Clerk: How about an outside room?
Wayback: Would it cost much more to sleep inside?

S. B., Logansport, Ind.

A heating contractor named Lobo,
Passed in his checks and took flight so-so;
At the Gate he did grin,
And say, "Please let me in,
I can't find a job down below-ho."

G. G., Frisco.

Home made records can now be produced on the phonograph, but most home made records won't bear repeating.

MIKE QUINN, Scranton, Pa.

JOIN THE NOBLE ORDER OF PIPE LINERS. Initiation fee, one good joke or story; annual dues, as many more jokes and stories as you can write, wrap and mail. A. W. B.

THE IMPORTANCE *of a* PURE WATER SUPPLY

Careful and Thorough Investigations by the Ohio State Department of Health Show That Impure Water Supply Was the Cause of the Typhoid Fever Epidemic at Salem, O., in 1920, in Which About 7,000 Cases of Enteritis and 884 Cases of Typhoid Fever Were Reported, the Total Number of Deaths Being 27

By W. H. Dittoe

Chief Engineer, Ohio State Department of Health.

THE epidemic of typhoid fever which occurred at Salem, Ohio, during the fall of 1920 is of unusual interest to persons engaged in public health work. This epidemic showed one of the highest case rates ever recorded and at the same time, the mortality rate was the lowest of the important epidemics of the United States. The epidemic was caused through the medium of a public water supply which, for many years had been of a high degree of purity and had never previously been held responsible for any waterborne disease. These features of the epidemic warrant a complete relation of the circumstances surrounding it, and there is now in preparation an official report to be issued by the Ohio State Department of Health, which will supply all details. Therefore, I shall not endeavor to discuss completely all phases of this epidemic and shall only relate the important circumstances, including a description of the water supply system and the manner in which it became contaminated.

The city of Salem is located in Columbiana county in the northeasterly portion of Ohio at the headwaters of Little Beaver River, a tributary of the Ohio River. The population of the city is about 10,000. It has a thriving industrial development, but its rate of growth has been rather slow. In addition to its public water supply system, the city has a system of sewerage constructed on the separate plan and also has a number of paved streets. The sanitary sewers cover practically all of the built-up area and serve a population of about 9,000. Sewage is delivered to a sewage treatment plant located northwest of the city, consisting of tanks and intermittent sand filters, the effluent from which is discharged into a small creek. This plant is inadequate, and, moreover, it has been greatly overburdened due to the misuse of the sanitary sewers. The city has neglected to control sewer connections and as a result, these connections have been established very carelessly and have permitted large volumes of surface and subsoil drainage to reach the sewers. In addition, there are several poorly constructed private sewers connected to the system. It will be shown later that the improper control of sewage was a contributing cause to the occurrence of the epidemic.

History of Epidemic.

During the early part of September, 1920, an outbreak of enteritis occurred in Salem and was observed by the local physicians and the health commissioner. This outbreak was not intense and as cases of intestinal disorders were more or less prevalent in other communities nearby, no particular concern was aroused. It was thought by local physicians and health officials that the sickness was "intestinal influenza," but in the light of facts later learned, the Salem cases were without doubt of a different kind and due to an entirely different cause. After partial subsidence of this outbreak, a second and more intense outbreak of enteritis occurred starting about September 23rd, and consisting of approximately 7,000 cases. Typhoid fever made its appearance about October 1st and after October 12th, the typhoid fever cases increased very rapidly, the epidemic mounting to a peak on November 1st. Thereafter, a rapid decline occurred. The total number of typhoid fever cases which were reported and investigated was 884, including not only the epidemic cases, but those which preceded and followed the epidemic. The total number of deaths resulting from the epidemic was 27.

While investigation showed that the typhoid fever epidemic started about October 1st, the actual existence of typhoid fever within the community was not known until October 13th. In the early part of October, the city health commissioner issued a public warning that the water from the public water supply should be boiled, but this warning was only based upon a policy of playing safe and was not the result of knowledge that the water was contaminated. In fact, at that time, the water supply of the city was still considered to be above suspicion owing to its previous history. The State Department of Health was called upon October 13, 1920, to investigate the enteritis outbreak and in connection with this investigation, which was conducted by an epidemiologist of the Department, the existence of a few cases of typhoid fever in the city was learned. Circumstantial evidence pointed to the public water supply as the cause for the enteritis and, accordingly, a boiling notice was repeated on October 15th and request was made by the epidemiologist for an engineering investigation of the water supply system. This was conducted as promptly as possible and included field analysis of water samples. The results of this study are shown graphically by Plate No. II. The result of this investigation fixed the water supply conclusively as the cause of the epidemic and, accordingly, disinfection of the water supply with liquid chlorine was decided upon and started October 20th. It is pertinent to observe that at this time, the local health department knew of only four cases of typhoid fever in the city, but as the subsequent studies demonstrated, about 100 persons were suffering from the disease at the time, whose cases had either not been diagnosed or had not been reported. The disinfection of the public water supply checked the epidemic. It, of course, did not affect those persons who had received infection

previous to October 20th, but it prevented further infection, and subsidence of the epidemic occurred on schedule time. The size of the epidemic was not realized until the early part of November when reports of cases multiplied, and on November 9th, at the request of the city officials, the State Department of Health assumed charge of the local situation and sent representatives to make a thorough investigation and to apply necessary remedial measures to prevent the spread of the disease.

Sanitary Investigation.

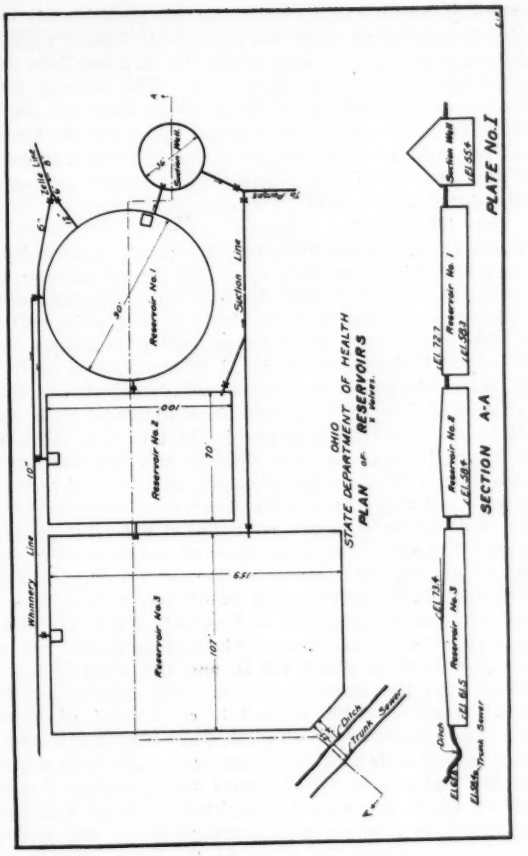
When the representatives of the State Department of Health undertook the investigation on November 9th, practically no accurate information regarding the epidemic was available except the knowledge that the public water supply had been the medium of infection and that by instituting chlorination on October 20th, this cause of the disease had been removed. It became necessary, therefore, to institute a careful inquiry regarding the situation throughout the city and for this purpose, what has been termed a sanitary investigation, was made. This comprised a visit to each occupied building within the city and in the built-up district surrounding the city, a total of 2,630 places. Information was obtained regarding cases of illness and the nature of the same occurring after September 1st; the source of the water supply used prior to illness, the existence of water service connection, a private well or other private source of supply, and the existence of a sewer connection, privy or cesspool. In addition, printed notices were left at each place, containing a warning to boil all water used for drinking and giving instructions regarding disinfection of stools from typhoid fever patients. This sanitary investigation would not have been possible had it not been for the earnest effort of the local War Workers' Organization. By the united effort of the members of this organization, the sanitary investigation was practically completed during a period of 24 hours, making the information promptly available. The results of this sanitary investigation gave information which was the basis upon which the epidemiological investigation was made and the various remedial measures were applied to check the spread of the disease.

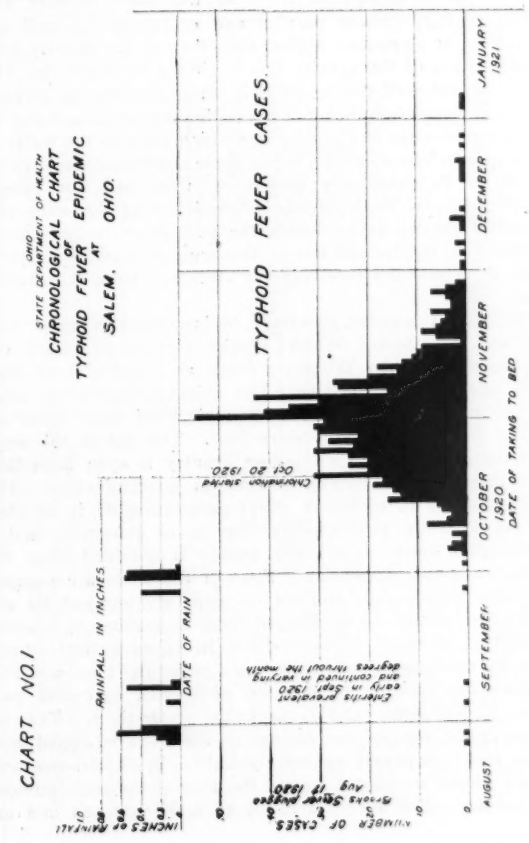
Epidemiological Investigation.

Starting on November 9th and continuing until the epidemic had subsided, a careful and thorough epidemiological investigation was made of each case. The usual information regarding each case was secured, consisting of the date of first symptoms, the date taken to bed, the location of the case, the sex, age and color, and an inquiry to determine the possible exposure factors during the period when the disease was contracted. These factors included the milk supply, the food supply, the water supply, the attendance at public gatherings, and the opportunity for contact infection. I shall not endeavor to present any details of the results of the epidemiological investigation. All sources of infection were clearly eliminated except the public water supply of the city which was found to be the common factor. The chronology, distribution and general character of the epidemic also pointed to the public water supply as the cause. Therefore, the evidence established the epidemiological diagnosis "that the contamination of the public water supply was the cause of the epidemic."

Description of Water Supply.

The following description of the public water supply system of Salem applies to the system as it existed prior to the epidemic and does not include the changes or improvements made subsequently. The Salem Water Company started the development of the present water system in 1887, continuing its ownership until 1899 when the Salem Water Works Company succeeded to ownership. In 1909, the system became the property of the city. The water supply is obtained from four general sources, as follows: The Garfield Avenue wells, located immediately northeast of the central portion





of the city; the Whinnery wells, located approximately one-half mile west of the city; the Lease well, located approximately one-quarter mile west of the city, and the Zelle well, located immediately north of the city. The water is lifted from the various wells either by air-lift or deep well pumps and delivered by gravity lines to storage reservoirs located near the main pumping station in the westerly portion of the city, and from these reservoirs, the supply is pumped to the distributing system. The general locations are shown by Plate No. II.

The Garfield Avenue wells are very poorly located, being on a tract of land occupied by a high school building and in a district which is entirely built-up with residences, many of which have privies and abandoned private wells. There are also sewers and other contaminating influences near the wells. Wells were developed at this site as early as 1882 before the water company assumed control, and these were continued in use until 1898 when additional wells were drilled and the old wells deepened. At this time, the water was pumped from the wells directly into the distributing system, but in 1900, air-lift equipment was installed to pump the wells and a gravity line was constructed extending from the site of the wells to the reservoirs at the main pumping station. The wells have been operated in this manner since 1900. The Garfield Avenue wells are 265 ft. in depth, penetrating 12 ft. of clay, 100 ft. of brown sandstone, 80 ft. of fire clay or soapstone, and extending the rest of the way through white sandstone. The casings of the well extend to a depth of about 100 ft. and the water is mainly derived from the white sandstone. The gravity line has a total length of 3,400 ft. and is constructed of 12-inch vitrified salt glazed double strength sewer pipe in 3-ft. lengths with deep and wide sockets. Joints were made with cement. The line extends in Green Street and Jennings Avenue, both of which are almost completely built-up and there are numerous sources of contamination of the shallow ground water along the route of the line. Private and public sanitary sewers parallel and cross the line and are at points, at elevations higher than that of the gravity line. The location of the gravity line is shown by Plate No. III. The Garfield well development is unsatisfactory on account of the unfavorable location of the wells themselves and also on account of the use of a gravity line which subjects the water to dangerous contamination. While these conditions were recognized to be potentially dangerous, they had not caused trouble prior to the epidemic. Samples from the wells collected at various times during the past 20 years have given satisfactory results and this is also true of samples collected from the reservoirs receiving the discharge from the gravity line.

In 1903, it became necessary to increase the water supply and the Salem Water Works Company started the development of the Whinnery wells at a point about one-half mile west of the city. The original installation comprised six wells and five additional wells have been installed from time to time since 1903. The site of the wells is satisfactory. The surrounding country is open farm land and there are no nearby sources of contamination. The wells are 180 ft. to 200 ft. deep, penetrating 85 ft. of clay, 80 ft. of white sandstone, a few ft. of limestone and a stratum of black slate. The supply is obtained from the white sandstone formation. Four of the wells are pumped by deep well pumps and six of them are pumped by air-lift. The water is discharged into a gravity line which extends a distance of some 5,700 ft. in an easterly direction to the reservoirs at the main pumping station. This gravity line is well constructed of 10-inch cast iron pipe with leaded joints and is probably water-tight. The fittings at the tops of the casings of the wells equipped with deep well pumps are apparently tight. Brick cisterns with plank covers are placed around the tops of the wells pumped by air-lift. The covers are not securely fastened and are not tight, and the cisterns in general have been permitted to deteriorate so that the water as discharged from the wells is exposed to possible contamination. This is the only unfavorable sanitary feature of the Whinnery well development. Samples from the Whinnery wells have always shown this supply to be of excellent sanitary quality.

The Lease well, which is located about one-quarter mile west of the city between the Whinnery wells and the city, was developed in 1914 and is similar to the Whinnery wells. It is pumped by air-lift and is provided with a brick cistern. The same comment made in regard to cisterns at the Whinnery wells applies to this development. Samples from the Lease well have always shown freedom from contamination.

During 1916, the city increased the available water supply by drilling wells on the Zelle farm, located immediately north of the city. The location of these wells is satisfactory and the city owns a 24-acre farm at this point. Only one well is now in service. This is approximately 180 ft. in depth and penetrates 35 ft. of sand and gravel, 5 ft. of shale, an unknown thickness of brown sandstone and an underlying soapstone formation. The well is plugged at a depth of 165 ft. The water is obtained from the brown sandstone formation. The well is pumped by direct suction, the water being discharged into a gravity line constructed of 6-inch cast iron pipe with leaded joints and extending from the well site in a general southwesterly direction to a connection with the old vitrified pipe gravity line serving the Garfield Avenue wells. From this point, the combined flow of the Garfield Avenue wells and the Zelle well is conveyed in the vitrified pipe line to the reservoirs at the pumping station. The tops of the wells at the Zelle farm are not securely closed to prevent entrance of chance contamination, but otherwise, the well development is satisfactory. The gravity line is poorly located as it extends along the banks of a small stream and is, therefore, subject to washout. Evidence also indicates that the joints of this line were not made properly and that many of them are leaky.

The water from the various sources of water supply delivered through the gravity lines is received in storage reservoirs constructed at various times between 1887 and 1917. These comprise Reservoir No. 1, a circular structure 91 ft. in diameter and 12 ft. in depth with a stone wall and a concrete bottom and cover; Reservoir No. 2, a rectangular structure 100 ft. by 70 ft. in plan and 14 ft. deep with concrete floor, walls and cover, and Reservoir No. 3, a rectangular structure 159 ft. by 107 ft. in plan and 10 ft. deep with concrete floor, walls and cover. In addition, there is a pump well 36 ft. in diameter and 16 ft. deep with a concrete floor, brick walls and timber cover, from which the pump suction is normally taken. The reservoirs are so connected that water may be discharged into either Reservoir No. 1 or No. 2 and may be drawn to the pumps from the suction well or from Reservoirs No. 2 or No. 3. The general arrangement of the reservoirs is shown on Plate No. 1.

The condition of the reservoirs and suction well is not satisfactory. The bottoms of all of the reservoirs are in a leaky condition and the walls of Reservoirs No. 2 and No. 3 and of the pump well are also leaky. This permits the entrance of shallow ground water into the reservoirs when the water within them is lowered to an elevation below that of the surrounding ground water. This is of particular importance when it is known that the reservoirs are located at about the lowest elevation within the city, to which vicinity practically all of the natural and artificial drainage is directed. The main trunk sanitary sewer of the city passes Reservoir No. 3, at a distance of 23 ft. from its west wall.

The water supply is in general use by the citizens of the city and prior to the epidemic was popularly accepted

as a pure supply. It is also made available to the industrial plants of the city which generally maintain private supplies obtained from wells similar to those of the city. Careful investigation revealed existence of a number of cross-connections with the public supply.

Summarizing the above description of the water supply system of the city, it will be noted that while the water had for a number of years been considered safe due to favorable analysis and absence of outbreaks of waterborne disease, there existed at the time of the epidemic a number of defects in the development of the system. For convenience these will be repeated as follows:

1. The location of the Garfield wells is unsafe.
2. The gravity line serving the Garfield Avenue wells is of unsafe construction, probably not water-tight, and as it passes through the built-up portion of the city, the water supply is thus rendered subject to contamination.
3. The tops of the various wells are not securely closed.
4. The iron pipe gravity line serving the Zelle well is poorly located and has poorly leaded joints.
5. The reservoirs have leaky walls and bottoms subjecting the water supply to danger of contamination by shallow ground water.
6. Connections to the water works mains exist whereby private water supplies may reach the distributing system.
7. While not directly connected with the sanitary safety of the water supply, mention must be made of the inadequacy of the supply which has caused several severe shortages during recent years.

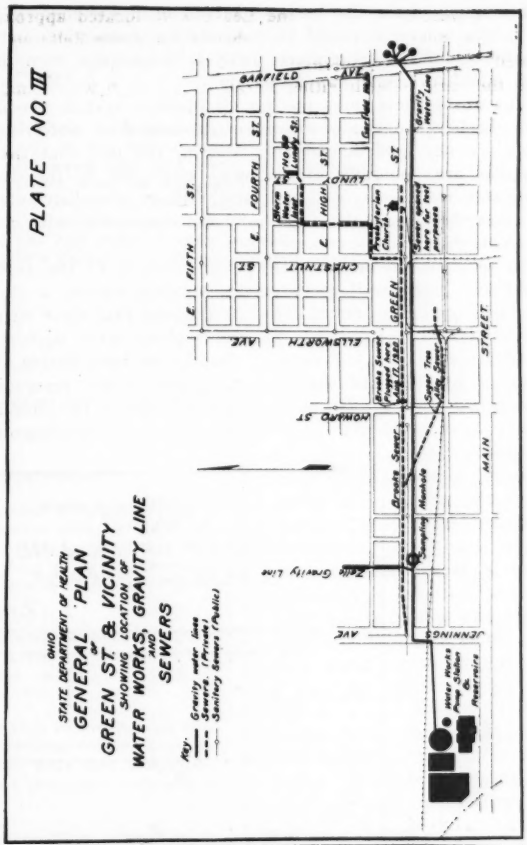
Manner in Which the Water Supply Became Contaminated.

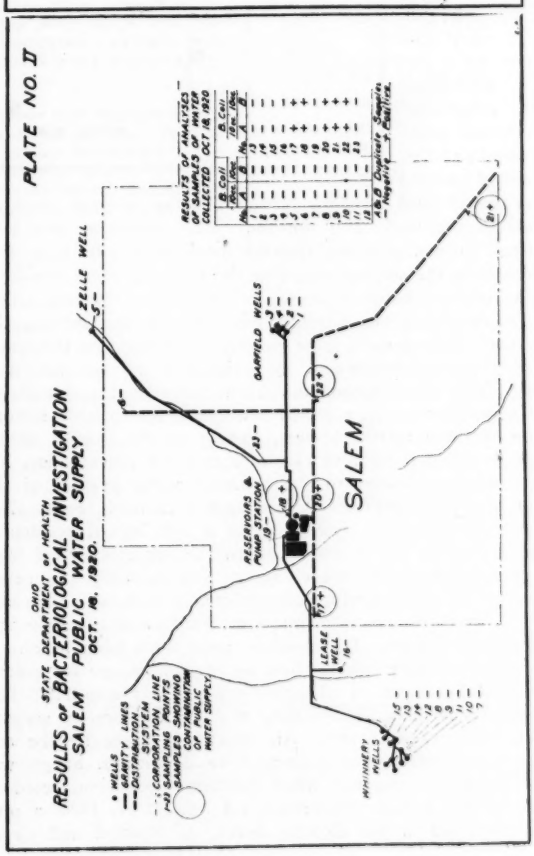
Recognizing the various defects of the water works system, it became necessary to determine beyond reasonable doubt the manner in which the public water supply became contaminated and thus caused the epidemic of typhoid fever. The investigations and studies of this matter required much time and painstaking care and obviously consideration of each defect was demanded. The first investigation made October 18th and 19th, including bacteriological examination of samples, indicated that the contamination was reaching the water supply through the vitrified pipe gravity line serving the Garfield Avenue wells and these results warranted the presumption that this was the cause of the epidemic. Plate No. II shows these results. Accordingly, in addition to chlorinating the water supply, beginning October 20th, the use of this gravity line for the Garfield Avenue wells was terminated October 27th as soon as pumping equipment could be delivered directly into the distributing system. It was necessary to continue the use of the lower portion of the vitrified pipe gravity line for conveying the water from the Zelle well until December 3rd when a new cast iron line was completed. A careful consideration of the various defects of the water works system finally eliminated all possible causes of contamination except the vitrified pipe gravity line. Taking up each of the defects, it may be advantageous to indicate how they were eliminated.

The possibility of deliberate or accidental contamination of the water supply through the tops of the well casings can not be eliminated definitely, but this does not appear as a probability, particularly in view of the fact that the history of the epidemic indicates that the water supply was infected on more than one occasion during the time the outbreak was developing.

Direct contamination of the Garfield Avenue wells probably did not occur as samples collected from them for a long period of years prior to the epidemic and during the period of investigation after the epidemic started did not show contamination.

The cast iron pipe gravity line serving the Zelle well under certain circumstances might have admitted contamination through a leaky joint, but this possibility is removed by the evidence that the line was under internal pressure

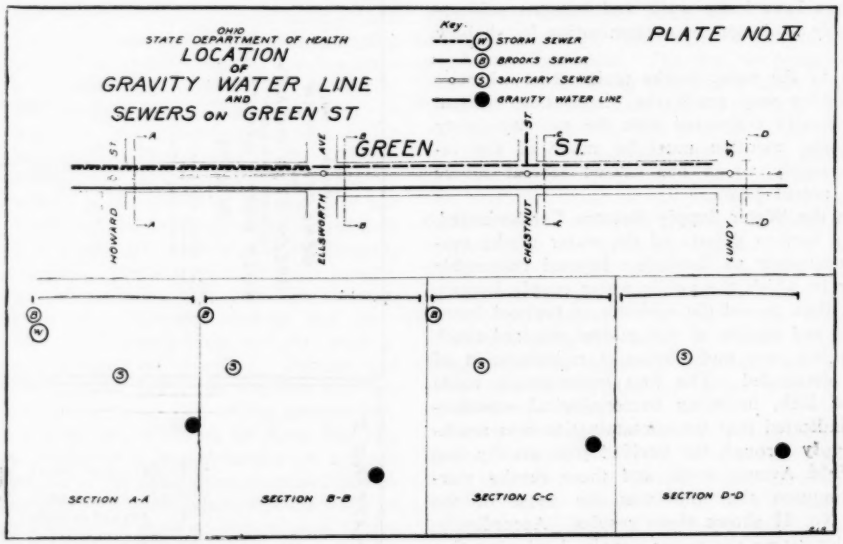




continuously from the spring of 1920 until October, 1920, at points where it would be possible for contamination to reach the line. Furthermore, analysis of samples from this line failed to show contamination.

The cross-connections on the distribution system permitting discharge of water from private industrial water supplies are not held accountable, due to the fact that these supplies are generally of the same character as the deep well supplies of the city, and, furthermore, the distribution of cases throughout the city would not correspond with contamination in this manner.

In spite of the unsatisfactory construction of the reservoirs and pump well at the main pumping station, a careful investigation produced evidence showing that these structures were not responsible for the typhoid fever outbreak. Evidence was obtained showing that at no time during the summer of 1920 did the level of water in the reservoirs fall below that of the shallow ground water surrounding them. A test was conducted to determine whether it would be possible for sewage to pass from the main sanitary trunk sewer of the city to Reservoir No. 3. This was done by plugging the sewer so as to place it under a head of 6 ft., adding at the same time to the sewage a considerable quantity of uranin which is a very intense green dye. Previously, Reservoir No. 3 had been completely emptied and it was noted that shallow ground water seepage entered through the walls and bottom. This condition was permitted to continue for slightly more than one hour and samples of the seepage reaching the reservoir were regularly collected, but failed to show evidence of the uranin color.



The study of the vitrified pipe gravity line serving the Garfield Avenue wells gave conclusive results that the water supply was contaminated by leakage of sewage into this line. This line extends in Green Street and is paralleled by a sanitary sewer, a storm sewer and two private sewers. One of these private sewers, known as the Brooks sewer, was installed a number of years ago for private use, but was later connected to the sanitary sewer system of the city and was continued in use as a combined sewer. Not only did it receive sewage from a number of residences and a church, but it also received the surface run-off from a built-up area of several acres, this reaching the sewer through a catch basin near its upper end. The Brooks sewer was constructed with open joints and the pipe was without bell ends. It, therefore, must have been leaky. A storm sewer paralleling it had discharged sewage for several years and a nuisance had been created at the outlet. This sewage was probably reaching the storm sewer by seepage from the Brooks sewer. An effort was made by the employes of the city to correct these conditions, but it was impossible to discover what dwellings were connected to the Brooks sewer. Therefore, on August 17, 1920, a plug was inserted in the Brooks sewer, at Howard and Green Streets, by employes of the city, with the thought in mind that sewage would back up in this sewer and flood cellars of dwellings connected to it, thus bringing about complaints which would expose the existence of connections to the sewer. However, no complaints arose and apparently the sewage continued to leave the Brooks sewer through the open joints without backing up sufficiently to flood cellars. With these conditions existing, heavy rainfall occurred during the last four days of August, 1920. This was followed by an outbreak of enteritis. Other heavy rains occurred September 9th, September 27th, September 30th, and October 1st, and apparently were the forerunners of the typhoid fever epidemic.

While all the evidence strongly pointed to soundness of the belief that the Brooks sewer and the gravity line were the causes of the epidemic, it appeared necessary to prove the possibility of passage of sewage from the Brooks sewer to the gravity line. In an effort to do this, a sampling manhole was placed on the gravity line near its lower end where the seepage leaving it could be observed, sampled and measured. It was soon found that the seepage was contaminated ground water and that the rate of flow was influenced by rainfall. A concentrated salt solution was introduced into the Brooks sewer above the plug and at the same time the Brooks sewer was filled with water from a fire hose to imitate surcharging such as would be caused by rainfall. Careful examination of samples from the gravity line showed an appreciable increase in the chlorine content, 30 parts per million being present before the test and 46 parts per million after the salt was applied. This was not considered to be sufficiently conclusive and further tests were made using uranin. This was applied at the storm sewer inlet to the Brooks sewer at the same time filling the sewer with water from a fire hose. Within two hours after this dye was applied at the storm water inlet, a definitely noticeable green discoloration appeared in the seepage from the gravity line at the sampling manhole. Allowing for the time for flow in the Brooks sewer and in the gravity line between the storm water inlet and the sampling manhole, the time for transfer from the Brooks sewer to the gravity line could not have exceeded 30 minutes. These investigations established conclusive evidence that the typhoid epidemic at Salem was caused by the passage of sewage from the Brooks sewer to the gravity line. Important confirming evidence is furnished by the fact that about October first there was a case of typhoid fever in a dwelling connected to the Brooks sewer, the stools from which were flushed directly into this sewer.

Measures Taken to Control the Epidemic.

The placing in operation on October 20th of a disinfection plant to treat the public water supply of the city at the main pumping station effectually checked the epidemic.

(Continued on Page 296.)

ONE REAL REASON FOR FAILURE

EDITOR'S NOTE:—By using one of these Editorials each week in your newspaper advertising you will help to educate your community in the true facts of plumbing and heating merchandising. Such education will create good will and build your business. The more the public knows the better your service will be appreciated. Take one Editorial a week and reprint it in the upper left corner of your regular advertising space. Have it set in bold-faced type, with rule or border around it, as indicated on this page. This will cause the Editorial to stand out and make it easy to read. The use of these Editorials from week to week will not add a dollar to your advertising expense, but they will help along sales.

NUMBER 13. This is the thirteenth in the series of Advertising Editorials. And, regardless of the jinx that is supposed to cling to thirteen, this will be as lucky in pulling results as Editorials one or twelve. There is power in numbers, whether they reach thirteen or seven-eleven.

And with that said, the subject of this week's little lecturette is numbers. The lack of ability to do a thing over and over again—to repeat a thought in a number of different ways—to keep everlastingly at it in a given direction—is one real reason for many failures.

It is so easy for most of us to get "all het up," as Grandpa Gorkin used to say, that we quickly reach fever heat over an idea, and then just as quickly cool off. And neither a rising nor a falling temperature ever helped business much. It is the long, steady pull—keeping close to an idea—that wins success. One of these Advertising Editorials used one week will scarcely make a dent in the public mind. But a different Editorial used each week for thirteen weeks will not only dent, but will drill a hole in the consciousness and begin to saturate the mind of the public with facts that will change thought, create interest, and stimulate sales. And that isn't all. To use one Editorial a week for fifty-two weeks, and then start in and repeat the whole series for a second year, will so educate a community as to establish a plumbing dealer on a solid, successful basis. He will be as sure of his place, and his place will be recognized as important as that of the banker, the doctor or any other contributor to human welfare. Believe it or not, but the first step toward success is public recognition for what you are. No business man can afford to ignore the right recognition of the community in which he lives and labors.

A Full Year of Advertising Editorials.

We do not say the Advertising Editorials will do all this for the master plumber, just because the Editorials happen to be our children. We would say the same if they were the children of anybody else. In fact, it has been our hope that the Editorials printed from week to week would stimulate many dealers to write their own. Perhaps some are doing this. To take advantage of local happenings or conditions, and make these the subjects of short editorials, and insert them into your advertising, is a fine way to create interest. If you do this, more power to you.

But the point is not by whom, where or how Advertising Editorials are written. The point is this: Are you using something of this kind, and are you doing it every week? If you are, then you don't have to be told about results.

The aim is to make the Advertising Editorials extend over a full year—fifty-two of them. One for every week. At the end of the year it will be the best kind of business policy for every plumbing and heating dealer to start in with number one and use the Editorials all over again. People are so busy they easily forget. A second printing and a second reading of these weekly messages will deepen the impression made by the first printing and reading. And the only impressions that last are deep impressions. And deep impressions are seldom made without repetition.

True Facts Are Stronger Than Fiction.

You may remember the story of the donkey. He did not like thistles; he would not eat them. But his master tied the donkey's head to a thistle and kept it tied there. Finally he ate the thistle. He couldn't do anything else. He would have been an ass not to have eaten it. And so it is pretty much the same with the public. People may not like the thoughts you give them in Editorials; they may even refuse to believe them. But if you keep the thoughts dangling before them—keep them tied close to their heads, as it were—they will finally believe them and like them. Eighty-five per cent of all people believe the things they are made to believe. Unless the plumbing trade does a lot of making there will be little believing.

Plumbing and heating men know that the points men-

A Series—No. 13.

SEE YOUR PLUMBER FIRST.

IF YOU make it a rule to see your plumber first, you may not have to see your doctor last. At any rate you will not have to see your doctor so often. The best of plumbing, kept in the best of order, prevents many of the ailments that medicine is brought in to cure.

A family can no more enjoy good health with bad plumbing in the home than with bad teeth in the mouth, or with a filthy garbage can stuck under its nose.

Bad teeth create a poison which is swallowed into the body; poor, faulty, leaky plumbing creates a poison which is breathed into the body. Both end in disease. Disease causes suffering, loss of time and money, and ends in death.

It is just as important to keep your plumbing in good condition as it is to keep your teeth and the organs of your body in good condition. In fact, you can't keep your body right unless your plumbing is kept right.

Many people go to their dentists and doctors every six months or so for thorough examinations. This is a good practice. But why not extend the habit? Why not have your plumber examine your plumbing every six months? This will double your health protection. Keeping your plumbing 100 per cent fit is the first step in keeping yourself 100 per cent fit.

tioned in Advertising Editorials are true facts. There is no desire to mislead the public. The facts are stronger than fiction. Therefore, to lead the public and make it believe, as the Editorials are doing, is a fair and honest work.

This series will be good next year or the year after. Because of this all the Editorials should be saved. If you are not ready to use them now, you may want to use them later. And meanwhile if you think of any subjects that should go into the series, jot down the ideas and send them in. "Domestic Engineering" wants your suggestions, for only by putting into the Editorials the thoughts you know should be put there can we hope to do the greatest amount of good.

Educating the public to know what it should know, clears the way for better business.

The National Trade Extension Bureau

BE A SALESMAN IN 1922.

An Open Letter to the Knights of the Grip.

Mr. Edward N. Hurley, ex-chairman of the Federal Trade Commission, in an article in the January issue of System, tells the following story:

"Looking over a counter of business books, an Englishman was struck by the number of volumes on selling—for the English do not yet quite comprehend salesmanship as an art that may be studied from books. He turned from one title to another and then he asked in a surprised way: But haven't you anything on selling what the man wants to buy? The bookseller might well have answered: No, we have not bothered much about that end. The greatest achievement is to sell a man something that he does not want or, failing in that, to educate him into buying what we have to sell."

Every salesman of plumbing and heating supplies is essentially the sales manager of the territory allotted him. For after all, the amount of the salesman's business is determined largely by the success of his dealers in selling. They are his salesmen! If he permits them to limit their selling to what the consumer is already willing to buy—if he fails to supply his dealers with new ideas and plans that will attract new buyers' dollars to the plumbing and heating field—then he is not a sales manager but an order taker, or as Mr. Hurley puts it—"An overpaid errand boy."

Is a salesman a good sales manager, who succeeds in getting his line specified, and then prevents the dealer from changing the specifications only by cutting his price on staple fixtures to match quotations made by a competitor?

Is a salesman a good sales manager, who is constantly writing the house, asking for a cut on staples to meet competition?

If you were promoted to your boss's job, about the first question you would ask yourself would be "How can I increase the sales?" In studying this question, you would find that from 6 to 20 per cent of the goods sold to plumbing and heating dealers are sold on architects' specifications. The remaining 80 to 94 per cent are sold by the dealer or, perhaps more truthfully stated, "purchased" from the dealer.

You know from experience that it is easy enough to "get your goods across" on a job, when working with the dealer, but as soon as you leave town that same dealer will be out working with one of your competitors. It is a hard job to keep him sold on your line between trips.

Therefore, one of your big problems as a sales manager is to work out a plan to make your dealers patrons or, better still, your salesmen instead of customers. How can this best be done? By selling them merchandising ideas that embody the sales of your goods.

First sell your patron (your customer or your prospect) the idea that he is a plumbing or heating "dealer." Then sell him the idea that a "dealer" must have a store—must use his show windows as a selling medium—must advertise. Then sell him the idea that your goods are the best for him to handle for such uses—and why. See that he displays them in his store, in his windows, and features them in his advertising. When you have done this you have unquestionably made a patron or salesman who will produce.

If the average plumbing and heating salesman would spend one half as much time selling the ideas outlined above, as he does in architects' offices trying to get his goods specified, he would produce much more real profit for himself and his firm. I say this with the authority of twenty years back of the buyer's desk of a plumbing and heating establishment.

Only a few years back, there was a time when it was difficult to sell a dealer these ideas. The dealer was not receptive, nor was the supply house able to furnish sales plans and advertising material. These problems have only been solved in the past few years.

Today the Trade Extension Bureau is being operated, by your firm and others, to supply your dealers with business building ideas, store and window lay-outs, sales plans and advertising copy. When you make it certain that your dealers are using this service, your sales will increase as they should increase.

Last year the plumbing and heating sales of this country were above normal in spite of the slump in business. If yours were below par, I appeal to you personally to allow us to help you increase them, as we helped others last year. Sell your dealers T.E.B. ideas and we will furnish the material. Remember we are both working for the same firm.

Today more than 4,500 salesmen will get this same letter, assuring them of our co-operation. Many of them are your competitors, but all of you can "cash in" on the same ideas; because present factory capacity could not produce the goods which would be required if plumbing and heating dealers would only dig up all the business which can be and should be developed.

Yours for a Banner Year,
The National Trade Extension Bureau,
Wm. J. Woolley, Sec. and Mgr.

Washington, D. C., Master Plumbers Elect Officers.

The Master Plumbers' Association, of Washington, D. C., at its recent annual meeting elected the following officers for the ensuing year: President, George W. Hanes, re-elected; vice-president, Raymond Corrigan; second vice-president, F. Bentley; secretary, J. M. Beane; treasurer, Samuel Artz, re-elected; sergeant-at-arms, E. L. Barnard.

Annual Report of Plumbing Bureau at Yonkers, N. Y.

William Bray, chief inspector of the Plumbing Bureau at Yonkers, has just made public his report for the year 1921 to the local Health Department. It gives some interesting details as to what the Bureau has accomplished. The report, which has been incorporated in the annual report of the Yonkers Health Department, shows that 344 plans for new houses were field, and 297 plans for old houses. The inspections made during the year included 829 water closets, 23 showers, 408 wash-trays, 541 sinks, 52 floor drains, 474 sewers for new houses, and 194 sewers for old houses. Water tests were applied to 336 new houses, 34 to old houses; peppermint tests to 155 new houses, 49 to old houses; six smoke tests to new houses. The waste and vents of 453 old houses were inspected, and 111 cesspools were inspected. The total inspections of new houses were 3,320, of old houses 2,592.

BEWARE *of* NEW IDEAS

Stick to the Old Methods, Grandfather Knew What He Was Doing. Efficiency Is a Joke. Courtesy Doesn't Pay. An Interview With Mr. Way Back, Who Tells How It Is Done

WHILE the ambitious are steadily, doggedly, persistently toiling up the ladder to success they remain comparatively obscure. It is only when they begin to show head and shoulders above the crowd that their praises are sung. But take the case of Mr. Way Back who enjoys the unique distinction of having started half way up the ladder and slid back to the first rung. With his left foot he is cautiously feeling for the ground, one more step back and he will be out. Surely there is a story here; we will interview Mr. Back.

Accordingly, armed with pad and pencil we call on Mr. Way Back whose grandfather, 60 years ago, was the most prominent (and only) plumber of Boalsburg, Penna. The city directory lists the Back establishment as of Sprott Street, which makes it a simple matter to find the location, as Sprott Street is not very long, less than a half block, it extends from the back door of the Sprott livery and boarding stables to Main Street. Here Mr. Back enjoys a complete monopoly as far as location is concerned, for anyone who happens to walk down from the back door of the stable to the street cannot be unaware of the fact that the shop is there.

"The trade discussion in the basement ceases and Mr. Back himself creeps cautiously up through the floor, carrying a large candle that would feed an Eskimo child for a week"

One unique method of advertising as employed by Mr. Back is that of having long sections of pipe extending from his cellar window out over, and so arranged as to completely block, the sidewalk. The very unusualness of this scheme makes it most effective, for numerous pedestrians have been noticed to stop thoughtfully before the barrier, consider it seriously for a moment and then rush into the shop, presumably to place a large order. In a short time they invariably come out, calling closing remarks back over their shoulders to the choleric Mr. Back who accompanies them to the door flourishing a Stilson.

We avoid the wrought iron entanglement, however, and upon scanning the front of the building, we locate the door, turn the knob and enter. An unsuspected stairway inside the door lends speed, if not dignity, to our entrance. But eventually we regain our composure and look around us for the first time. The shop, about 12x20 ft., is arranged somewhat after the style of the Egyptian pyramids,—no especial scheme carried out,—but the general impression given is that the stock on hand is there to stay. Four bath tubs, carefully crated and packed are banked against the east wall. This conserves space and, as the proprietor afterward explains, "everyone knows what a bath tub looks like, what's the use of rigging them up where they will get in everybody's road?" On the west side and nicely counterbalancing the tubs, is the "office." Here Mr. Back keeps his ledger, a desk, a chair for himself and one for his customers, an assortment of wrenches, lead pots and an automatic water heater that a slick salesman stuck him with two years ago.

A touch of human interest is lent to the atmosphere by a framed colored enlargement of old Josiah Back, originator and, although long since passed on, still the guiding light of the enterprise. Age, industrious spiders and thoughtless flies have somewhat clouded the outlook of the worthy old gentleman, but he still manages to peer out through the fog and repeat his life's motto, passed on to succeeding generations; "Be not the first, by whom the new is tried." The rest of it,—"nor yet the last to cast the old aside"—Mr. Back ignored.

Further, inspection of the shop is somewhat hindered by piles of materials arranged so as to completely cover the floor, but we can see from the front that the back of the room is devoted to the lavatory, soil pipe, assorted elbows and scrap lead storage department. A square hole in the floor evidently leads to the basement or to a mushroom cave, and from it come mingled odors, a feeble ray of light and the sound of voices. From the scraps of conversation we are able to gather that the owner is down in the fittings department, urging his mechanics to greater efforts in the interest of the business and doing a little missionary work in the interests of a proposed reduction in salary to come in the near future. But in the meantime the great reading public is waiting for the interview. We summon our pros-

pect by the simple expedient of coughing, stamping on the floor and finally shouting "Hullo."

The trade discussion in the basement ceases and Mr. Back himself creeps cautiously up through the floor, carrying a large candle that would feed an Eskimo child for a week.

"Well," inquires Mr. Back, belligerently, from which we gather that he is a man of few words to strangers. We explain our mission and under the stimulating influence of several fair cigars, Mr. Back's mind reverts back to the past and with his eyes fixed on the portrait of his astute ancestor he talks about his business.

He has been in the game for twenty years and he has seen many changes take place in that period, but he prides himself that he has never allowed himself to be stampeded by any half-baked theories or new wrinkles in plumbing. He attributes his present success to the fact that people know he is there and if they want any plumbing done they can hunt him up.

"Advertising any, Mr. Back?"

"Nope, don't believe in it. If a man is going to build a house he builds it, and the plumbing has to be put in, doesn't it? Well then, what good is advertising, you can't get 'em to put extra bath tubs in every room, can you?" We have a good laugh at the expense of the misguided advertiser. For after all, who could deny the soundness of Mr. Back's reasoning?

"Very busy these days?"

"Well, we've got a couple of jobs on hand if that confounded apprentice can ever get the stock together, he's down in the storeroom now hunting for some fittings." It is not a mushroom cave, then.

Mr. Back has a rich fund of reminiscences about his own, and other peoples' businesses. Some years back a friend of his wanted him to go in with him and open up a shop on Main Street, but he cautiously avoided financial disaster by turning the offer down flat. The fellow has since made good, he hears, but not by plumbing; he has a regular department store full of side lines, if Mr. Back ever wants to run a store he will run one, and not try to call it a plumbing shop. From which we are able to gather that Mr. Back won't ever want to run a store.

The system of bookkeeping employed is simplicity itself, new contracts he jots down on a piece of paper, he sends out bills to his customers every month or so, and he pays his own bills when they fall due, as nearly as possible. He figures his monthly profits by deducting what he paid out from what he took in, thus eliminating costly and useless accounting. Some months he has to deduct the other way round, but offsets this by temporarily ignoring bills from his supply men for as he frankly admits: "They are a bunch of robbers, anyhow."

The interview is brought to a close by the entrance of a customer with a grievance. He feels that he has not been fairly dealt with, but a few well chosen words from Mr. Back soon show him his place and he departs, warmly promising that he won't trouble Mr. Back again, not if he has to pipe water through his house with a hose and revert to the prehistoric tub-in-the-kitchen on Saturday night arrangement for bathing. This agreement suits the head of the firm perfectly and warning his former client to stay away from the shop in the future he allows him to depart—and the incident is closed.

But we cannot linger further amid the scenes of the grandeur that was, and accordingly, making our adieus, we locate the door and exit, leaving Mr. Way Back to communion with the spirit of his departed ancestor, his simplified bookkeeping and his three hundred and forty-eight separate styles and sizes of materials piled on the floor of his shop.

So some men are born great, some achieve greatness, but Mr. Back is too crafty to have greatness thrust upon him.

J. W. Murray.

J. W. Murray, well-known plumbing and heating contractor of the Plains, Va., lost his life in the recent Knickerbocker Theatre disaster, Washington, D. C. Mr. Murray was in his forty-first year. His wife, who was also in the theatre disaster, was seriously injured and is not expected to live.

Daniel T. Newman.

Daniel T. Newman, a member of the plumbing and heating firm of Newman Bros., New London, Conn., died at his home in that city recently after a long illness. He was a native of New London and for a number of years was employed by Newman & Cronin, later becoming a member of the firm of Newman Bros. His wife, mother and several brothers survive him.

Benjamin F. Townshend.

Benjamin F. Townshend, head accountant of W. L. Blake & Co., jobbers of plumbing supplies at Portland, Me., was stricken while returning to Portland from a business trip to Washington, D. C., and died in a Boston, Mass., hospital to which he was removed. He was born in London, England, about 50 years ago and was for years associated with the Blake company as bookkeeper. More recently he had been acting as an expert to large business concerns in connection with the income tax work. He was an excellent public speaker. His wife and a daughter survive him.

H. H. Meerhoff.

Herman H. Meerhoff, one of the pioneer plumbing and heating contractors of Richmond, Ind., died Wednesday, February 1st, in his 93rd year. He was the first plumber to introduce the inside sink in the city of Richmond. Born in Osnabruck, Germany, March 20, 1828, Mr. Meerhoff had made his own living since he was about twelve years old. He came to America at the age of twenty and went to Richmond in 1866. In the year 1870 he opened a plumbing establishment under the name of Meerhoff & Wefel, the first shop being on the site of the business which bears his name today. He is survived by four sons, one daughter, eight grandchildren and three great grandchildren.

INCOME TAX FACTS.

Changes in the revenue law are of material benefit to the average family man. Under the revenue act of 1921 a married person, living with wife or husband, whose net income for 1921 was $5,000 or less, is allowed a personal exemption of $2,500. Under the revenue act of 1918 the exemption allowed a married person was $2,000, regardless of net income.

The normal tax rate is the same, 4 per cent on the first $4,000 of net income above the exemptions, and 8 per cent on the remaining net income. Given his personal exemption of $2,500, plus $400 for each dependent, a married man with three children—the average American family—will pay this year on a net income of $4,000 a tax of $12. On the same income for 1921 he would have paid a tax of $56.

Every citizen and resident of the United States must determine for himself whether his income for 1921 was sufficient to require that a return be filed. Full instructions for making out a return are contained on the forms, a copy of which will be sent to taxpayers who filed a return last year. Failure to receive a return, however, does not relieve a taxpayer of his obligation to file a return on time, on or before March 15, 1922. Forms may be obtained from collectors of internal revenue and branch offices.

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

CHANGES IN PIPING TO HEAT TWO RANGE BOILERS FROM FURNACE COIL.

Editor, "Domestic Engineering":—Will you kindly tell me why I can not get hot water in boiler on first floor? Boiler on second floor gets hot. Sketch in Fig. 1 shows how the job is installed. Will you kindly make corrections?

Tennessee. G. W. B.

On correspondent's sketch, Fig. 1, we insert arrows which show the direction of the currents which circulate hot water

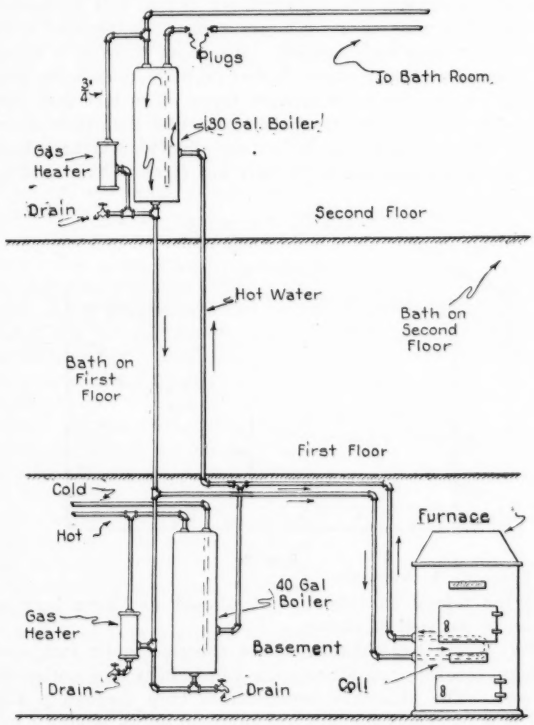


Fig. 1.

from the furnace coil up to the range boiler on second floor and back to the furnace coil.

This is the way the water circulates, and it by-passes the lower range boiler, consequently this lower range boiler cannot be heated from the furnace coil by this method of piping.

Each range boiler can, however, be heated independently from and by its own gas heater.

Fig. 2 shows some changes in the connections, which we think will heat both boilers. In the first place, we suggest re-connecting the cold supply to the upper boilers, which your sketch shows to be disconnected and plugged. Also place two valves where shown at C, so that circulation to upper boiler can be shut off during summer when gas heaters are being used. The arrows in Fig. 2 show how the main hot water current, coming from the furnace coil, can be split so as to serve both boilers. To do this properly may mean checking down the valve at C, so as to compel some of the hot water to descend into the lower boiler. Each

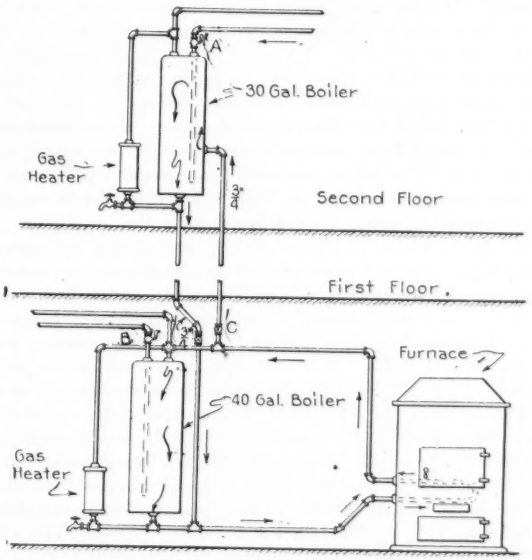


Fig. 2.

boiler should have its own separate cold supply shut-off valve or stop-and-waste at A and B. We think this arrangement will be quite satisfactory and safe, providing valve C is shut when furnace coil is not in use.

PLUMBING CONTRACTOR'S IDEAS ABOUT SEPTIC TANKS.

Editor, "Domestic Engineering":—I was interested in the able article by Frank R. King, on Sewage Disposal, and I would like to hear from some one who knows how a septic tank works or what is meant by working. I put in four the past year, and if they need cleaning out while I am around I shall need your best wishes. I am sorry that I

cannot have a septic tank of my own, because I would provide a place to examine the water that comes away from it.

I have read all I could find about septic tanks, and no two experts seem to agree. Some say the depth of water should be at least 30 inches, some say 42 inches, but we have quite a few ready-made tanks here, which have only 23 inches of water. They have been in use for more than 7 years, without any attention that I know of. I put in one of them that

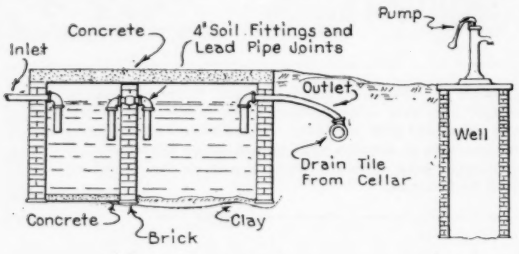


Fig. 1.

has been used 5½ years, by a neighbor. It has worked without any trouble or attention, but it only takes care of the water from the bathroom, the kitchen sink emptying into a separate tile. The outlet is a drain tile along the street which takes storm water also.

I would not expect Mr. King's tank to work without cleaning out. It is only an expensive cesspool. I don't believe in spending a lot of money on a cesspool.

I have known of one homemade septic tank outfit giving trouble. It was made by a plumber who made many of them here several years ago. But the trouble was in the outlet, not in the tank. They are concrete all over and no one seems to know how they are made inside. He used a hole filled with cinders to take the overflow. I was called to one and found the cinders full of water. I dug them out. The tile was full of semi-solid material like a choked sink waste pipe. I wired it out until black water came, then I bricked up a hole about 4 ft. high and 3 ft. in diameter, and put cinders around and over the top of the brickwork. I never heard about it again until a few weeks ago, when the present owner called me to see what was the matter with his plumbing. I told him it was the outlet, and about where to find the cesspool. They dug it up, and found it full. They made a new one to one side. My cesspool just lasted them 3 years. Now do you say that the septic tank works all right? It takes the water from the kitchen sink, as well as from the bathroom. The tank is under a concrete platform and steps, so it won't be opened until it clogs up.

I would like to tell about one so-called septic tank that I helped a mason make 5 years ago. It was the opposite of what it should be, but it works. It had two compartments about 3x3x3 ft. The first one had a concrete bottom. The second had a clay bottom. The plumber brought some siphons, as he called them, and told the mason how to put them in. But the mason knew better, because he had made one a year before, that worked. I kicked as much as I dared. I called up the plumber and wanted him to interfere before the whole family got killed, but he said it wasn't any of his business as the owner was there. This tank emptied into the drain from cellar floor, about six inches under the concrete floor, and was constructed as shown in Fig. 1. They put large drain tile on end, near this drain tile, to provide a damp cool place for butter and milk. No, I didn't eat there. But six summers have passed, the daughter got married, and the boy has gone away to work. The two old people and sometimes a servant girl stay there. Nobody has been sick in the family that I know of. They use a neighbor's well for drinking water, but water a cow and horse from the well near their septic tank. The tank has never had any attention. I never had the nerve to ask how the butter and milk stood it.

For country residences I would make a concrete tank 2½ ft. wide, and not less than 2 ft. deep below the outlet to top of concrete floor, probably 2½ or 3 ft. would be better, and each compartment 3 or 4 ft. long, but use elbows instead of tees. Don't let any air get into the compartments except the air entering with sewage, and let the water flow away to some place where it will do no harm.

The principal point to remember, which I find farmers don't like to do, is to use sewer pipe instead of drain tile until you get far enough away from the well. The sketch, Fig. 2, shows one that has worked for 3 years.

Illinois. A. L. F.

The writer of the above very interesting remarks on septic tanks is a progressive plumbing contractor in Illinois. In his ordinary work-a-day life he has no time to write such lengthy epistles because of the press of business, but when he wrote that, he was at home sick, and just had to get it off his mind. When a fellow is sick enough to stay home but not to be in bed, writing his experiences for the benefit of others is a very pleasant occupation which can be turned to the advantage of mankind, as this enlightening letter may be for the plumbing trade.

Regarding his opinions of Mr. King's septic tank designs, which have been shown in "Domestic Engineering," the writer will make no comment, but would suggest that Mr. King study the matter. Perhaps he will have something to say on the subject.

With reference to the layout shown in Fig. 1, it is pleasant to hear that none of the occupants of the house died since that septic tank was installed. We think there is a streak of luck running somewhere in that property, which has protected the inmates from typhoid fever. The fact that they do not drink the water from their own well is in their favor.

The effluent from that septic tank should never have been run into the cellar drain; at least not close to the building,

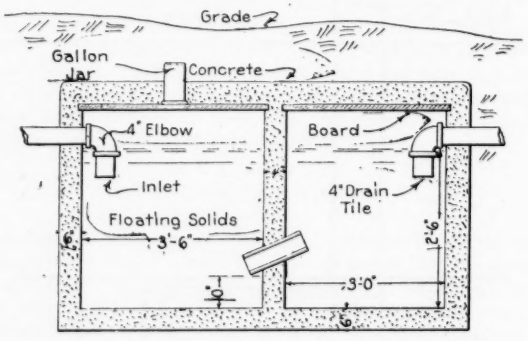


Fig. 2.

and the piping and septic tank should not have been as close to the well as shown.

Fig. 2 is a two-chamber closed concrete septic tank with arched concrete top fitted with 4-inch inlet and outlet tile elbows. The chambers communicate only through a 4-in. tile pipe built into the concrete partition on an angle.

There is no doubt at all about these two tanks accumulating sludge which will have to be pumped out at some time or other. The effluent from both of these tanks, although perhaps comparatively clear, must necessarily be highly charged with sewage bacteria, and should not be delivered directly in a dry creek or street gutter.

The effluent should be disposed of by subsoil disposal tile or by some method of filtration or sterilization, such as the chlorine treatment.

NOW COMES "THE STORY *of the* BATH"

An Advance Look at the New Booklet Which Is About Ready for Its Wide Distribution

By Carl Sandburg,

Poet and Critic, "Chicago Daily News"

Editor's Note: "The Story of the Bath," now in the hands of the printers, will be ready for circulation by "Domestic Engineering" within the next few days. It will be 6x8 inches, 32 pages and cover, beautifully illustrated and printed, and easy to read. This booklet will mark the beginning of an enlargement of the Bath a Day movement. A small charge will be made for "The Story of the Bath."

HE HAS GONE and done it again. Every little while Edwin L. Barker writes a story that makes people sit up and think. His latest is "The Story of the Bath." All good men and women who bathe regularly, as well as those who do not, will want to read this story, and then will want to keep it within easy reach, just as many of us used to keep Barker's "The Story of Bread" and Elbert Hubbard's "A Message to Garcia." That is my way of saying that every reader who reads "The Story of the Bath" is pretty sure to like it. And to like a thing of this kind is to re-read it, talk about it and encourage others to read it.

"The Story of the Bath" is going to make some splash. It is that kind of a story. It is as interesting as a novel and as full of information as a dictionary.

I would like to quote the whole story. But since I can't do that I am going to pick out a few of the many choice lines, which will give a slight idea of the simple, breezy, hard-hitting style that makes the story easy to read and easy to understand.

Here are the lines. Read them, and then imagine the joy that is in store for all who are carried through the pages:

"We ought to live to be a hundred, and we will when we know how to live."

"Usually we get what we need when we need it."

"A thousand years without a bath."

"Knights of the Bath are not Saturday Nights."

"We are learning how to live, which is better than learning how to die."

"When the world seems blue, take a bath and watch it grow rosy."

"To live long and well is no longer a mystery."

"The bath is the most individual thing in the world, unless it be whiskers or the length of a woman's skirt."

"Dirt does not grow out of poverty; poverty grows out of dirt."

"For everything we lose we must find something to take its place."

Cartoon of Edwin L. Barker, Author of "The Story of the Bath," by William Timlin, Artist of "Chicago Tribune."

"We must learn to fit ourselves with baths just as we have learned to fit ourselves with shoes."

"The story of the bath is not a new story. It is as old as time; as fresh as this morning's morning."

I could go on and quote and quote, for almost every paragraph on every page is the kind of stuff that is worth quoting. The whole family will like "The Story of the Bath." My guess is that preachers will use this story as a text for sermons; editors will find in it themes for editorials; schools and colleges everywhere ought to take it for supplementary reading. If every industry will place "The Story of the Bath" in the hands of employes there is sure to be a much-needed increase in health and efficiency.

Mr. Barker has the happy faculty of giving a reader a great many interesting facts without apparently trying to give anything but a bright, breezy tale. But he frequently stops the reader with a thought that makes the reader think.

For example, in "The Story of the Bath," a few of the questions that stop a reader are these: Who said, "Cleanliness is next to godliness," and why did he say it? What is the art of living? Why are people attracted to water? Where was the first bathroom? Who were the first to use bathtubs? Why was Moses named Moses? Does human nature or politics ever change? Who originated the Order of the Bath and why? How did we get the idea of bathing on Saturday nights? What was the name given to the first shower? What is the effect of water on the skin? How can a person find a bath that is exactly suited to his needs? Why was it unnecessary for our grandfathers to bathe as often as we should bathe? These and dozens of other fine points are asked and answered. And they are done in such a way as to stir an interest while they are spreading information.

In printing this story "Domestic Engineering" is rendering a most valuable service to humanity. The story will do two distinct things, or so it seems to me. First, it will cause people to think of bathing as they never have thought of it; secondly, this thinking will create a desire for more of the appliances used in taking baths. And thirdly, which is merely a summing up of my first and second, to make people want to take more baths and to make them want the necessary appliances with which to do the job well and often, call for the praise of all good citizens.

The doctors are going to appreciate "The Story of the Bath." And so are dentists, health societies, insurance companies, and so are a lot of other professions, industries and organizations. Then there are our hard-working friends of the Americanization Society. Will they see good in this story? Ask them. They know the important part the bath plays in the making of better American citizens. It may be a little difficult to reach some of the fathers and mothers that come to our shores. But through the schools their children can be reached, and through the children the parents may be reached. It's pretty hard to teach an old dog new tricks, so we are told. So, even if the parents of some of our children are never converted to daily bathing, the gospel of the bath is worth while. For the children of today will be the parents of tomorrow, and when tommorrow arrives they will understand, and will want bathrooms, and will use them.

There is nothing like "The Story of the Bath" in our literature. Search the libraries—go as far as you like—and while you may catch a bathing idea here and there, you will not find one book that holds a tenth of the truths found in this brief story. Neither will you find anything half so interesting.

I predict a very large circulation for "The Story of the Bath." I also predict that it will live—that it will be read and re-read—and that it will go on doing good long after many of us have passed the need of a bath.

I have been promised one of the first copies that comes from the press, and it will go into my library to stay. That's what I think of "The Story of the Bath," and if my thinking is worth anything, every reader will think the same.

Late News from Seattle, Wash.

Catholic parishes in the Seattle diocese plan during 1922 to expend $475,000 in the erection of church and school buildings, or in addition to present structures. Two $100,000 projects are listed. One of these calls for construction of a central unit to the Brisco Orphan Boys' Home at Orillia, funds for which are available, and plans completed. The other $100,000 structure is a 20-room school to be built in Ballard. The structure will be of brick, two stories and basement, providing for 540 children. A brick school to be built for St. Ann's Parish on Queen Anne Hill will cost $50,000, and a $75,000 brick veneer church on Harvard Avenue and Lynn Street will also be built. A brick building with five class rooms to cost between $50,000 and $60,000 is planned for 42nd Avenue South and Orcas Avenue. A two-story brick school building costing between $50,000 and $100,000 is planned for St. Mary's Parish, on 20th Avenue and Lane Street, to accommodate about 400 children in the parish.

Low bid for general work in connection with the proposed two-story addition to the Central Building has been submitted by W. T. Butler, Central Building, with figures of $40,900 and $45,100 respectively for Plans Nos. 1 and 2. Information regarding subcontracts for the 240x111 ft. addition will be withheld until the general contract is awarded. The structure complete will cost $175,000.

Architect H. H. James, American Bank Building, has issued a call for bids from selected contractors for a new three-story store and office building to be erected on 4th Avenue and Seneca Street, for Wolf & Smith, American Bank Building. The building will be 60x50 ft. providing for three retail stores on the lower floor, and three stores on the second floor. The upper floor will be used for office space. Structure will be of reinforced concrete. Sub-contract bids will be called for later.

June 6, 7 and 8, 1922.—The fourth annual convention of the Women's Auxiliary of National Association of Master Plumbers, at Detroit, Mich.

February 13, 1922.—Winter meeting of the American Boiler Manufacturers' Association, at Fort Pitt Hotel, Pittsburgh, Pa.

February 14, 15 and 16, 1922.—The annual convention of Ohio State Association of Master Plumbers, at Canton, O.

February 15, 1922.—The winter meeting of the Central Supply Association, at Hotel Stratford, Chicago.

February 20, 21 and 22, 1922.—The annual convention of Nebraska Retail Plumbers' Association, at Omaha, Neb.

February 24 and 25, 1922.—The annual convention of the Montana State Association of Master Plumbers, at Boulder Hot Springs, Boulder, Mont.

March 7, 8 and 9, 1922.—The annual convention of the State Association of Master Plumbers in North Dakota, at Grand Forks.

March 13 and 14, 1922.—The third annual convention of the South Dakota Retail Plumbers' Association, at Huron, S. Dak., with headquarters at the Elks' Hotel.

March 13, 14 and 15, 1922.—The annual convention of the Indiana Society of Sanitary Engineers to be held at Indianapolis.

March 20 and 21, 1922.—The annual convention of the Missouri State Association of Master Plumbers, at Kansas City, Mo.

March 27 and 28, 1922.—The annual convention of the Kansas Master Plumbers' Association, at Salina, Kansas.

March 28 and 29, 1922.—Annual convention of the Michigan State Association of Plumbing and Heating Contractors at Flint, Mich. Headquarters will be in the Durant Hotel.

April 10, 11 and 12, 1922.—The annual convention of the Oklahoma State Association of Master Plumbers, at Shawnee, Okla.

April 17 and 18, 1922.—The annual convention of the Tennessee State Association of Sanitary Engineers, at Memphis, Tenn.

April 18, 19 and 20, 1922.—The next annual convention of Iowa Master Plumbers' Association, in Mason City, Iowa.

May 2 and 3, 1922.—The annual convention of Colorado Society of Sanitary and Heating Engineers. It has not yet been decided where the convention will be held.

May 8 and 9, 1922.—The twelfth annual convention of the North Carolina Association of Master Plumbers, at Asheville, N. C.

May 12 and 13, 1922.—The annual convention of the Association of Master Plumbers of the State of Washington, at Tacoma, Wash.

May 15, 16 and 17, 1922.—The annual convention of the Kentucky State Association of Master Plumbers in Ashland, Ky.

May 16 and 17, 1922.—The annual meeting of the National Pipe and Supplies Association, at Pittsburgh, Pa., with headquarters at the William Penn Hotel.

May 19 and 20, 1922.—The annual convention of the Oregon State Association of Master Plumbers, at Seaside, Ore.

May 22, 23 and 24, 1922.—The annual convention of the State Association of Master Plumbers of California, at Sacramento, Calif.

June 6, 7 and 8, 1922.—The fortieth annual convention of the National Association of Master Plumbers, in Detroit.

February 20, 1922.—Concert and Reception of the Master Plumbers' Association of Greater New York, to be held at the Hotel Pennsylvania in New York City.

Exchanging Ideas is the Foundation of Progress

What Associations Are Doing

Through United Effort the Individual Succeeds

Providence, R. I., Master Plumbers Elect Officers.

At the annual meeting of the Providence Master Plumbers' Association, the following officers were elected for the ensuing year: President, Joseph F. Williams; vice-president, John E. Graham; treasurer, Edward Barry; secretary, James Phillips. Reports given by the officers show the association to be in a strong financial condition and to have increased its membership during the year. Various plans were discussed for the work during the year, which promises to be a successful one with the business outlook more promising than for several years past.

Massachusetts A. S. H. & V. E. Discuss St. Lawrence Ship Canal.

The Massachusetts Chapter of the American Society of Heating and Ventilating Engineers met January 24th, at the Boston City Club, in conference between the Boston Chamber of Commerce and the American Society of Mechanical Engineers, Boston section. The St. Lawrence Ship Canal project was discussed. Prominent speakers for and against the plan were heard.

Planning Educational Campaign for Plumbing Apprentices in San Francisco.

The Master Plumbers' Association, of San Francisco, Calif., under the guiding hand of Secretary John L. E. Firmin, for some years past has been formulating some plan of encouragement, guidance and education for the welfare of young men desiring to enter the plumbing business as apprentices. It is now about sixteen years since a similar step had been taken. The great conflagration of 1906 was the chief factor in discontinuing the plans made for apprentices at that time. At a meeting held recently the association made it a point to resume the matter. It is now in the hands of an appointed committee consisting of William P. Goss, J. H. Pinkerton and Joseph Rohr. This committee is working very hard to re-establish the plan on the same basis planned before the fire.

"Business conditions," Mr. Firmin says, "have changed a great deal during the last ten to twenty years. A plumber has to be educated now to be a successful business man while the plumber of ten to twenty years ago needed only a fair conception of the trade. This is the chief reason I am trying so hard to have the apprentices of the present time educated. The association has come to the realization that the apprentice is the seed from which the master plumber has grown.

"We are working," continued Mr. Firmin, "toward a definite goal and that is a more modern conception of the word 'education.' We find that the plumber of the present day must know the value of money as well as have a knowledge of books. He must have adaptability, a technical training of the hands, and system. He must know about general deportment and a knowledge of the three R's. The only way for the apprentice of today to have this knowledge is to have an education, and education is the goal we are working for.

"The committee is working in conjunction with Mr. Ronconvieri, superintendent of schools in San Francisco. Mr. Ronconvieri promised to give his entire support for the education of the young apprentices. He immediately took the matter up with H. Roberts, professor of English in the Humboldt High School, and then with Professor McHenry, of the educational department, that is devoted to the training of young men in any trade. The final reports have not been received as yet."

Alex Coleman, past president of the association, occupied the chair in the absence of William P. Goss. Mr. Firmin also gave a convincing talk on the value of self-respect, cultivation of natural abilities, etc. He also talked about the advantage of free-hand drawing, without which the plumber of today is practically helpless.

Mr. Firmin's praiseworthy campaign has attracted the attention of the Master Plumbers' Associations of Alameda and Berkeley.

"Neversweats" Prove Superiority Over "Leatherheads."

Some time ago the Master Plumbers' and Steamfitters' Association of Westchester County, New York, became in a friendly way divided into two factions, the Neversweats and the Leatherheads. Smiling Robert C. Daines took up the cause of the non-perspiring camp and was promptly elected captain of their legions. William B. Lippoth was chosen as the most likely candidate for the corresponding honor with the group that boasted the calf-skin craniums and the contest was on.

It was agreed that at the end of a certain time the team showing the highest average in new members and attendance would be obliged to dine at the expense of the side that couldn't stand the pace. This arrangement was agreed to readily, both feeling that they would have the pleasure of watching their opponents eat themselves into attacks of compound indigestion and dyspepsia.

The race was close and exciting, each side had its innings, but January 30th, the date set for the final round and banquet saw the Neversweats cantering down the track a full quarter turn ahead of the Leatherheads.

It was a stormy night in Westchester county, but in spite of the blizzard two hundred or more steamfitters and plumbers and plumbers' wives and steamfitters' wives and assorted daughters and sweethearts assembled at A. E. Karl's new building for a dinner and dance in honor of Field Marshal Daines and his victorious followers.

The Neversweats were heaped with praise, but they were generous in victory, while the defeated Leatherheads arose to the occasion with characteristic good sportsmanship declaring themselves ready to try again any time anyone murmurs the challenge.

In the absence of President George F. Pressmar, Vice-President Frank J. Martin presented the secretary, John B. Clegg, with a ring as a token of the association's appreciation of his work in that office. His daughter, who assists him in his secretarial duties, was presented with a wrist watch.

Then they dined together amiably and they danced together happily and the rigors of the campaign just past were forgotten, ending the terrible struggle between the great Leatherhead and Neversweat clans of Westchester.

AMONG THE WHOLESALERS AND MANUFACTURERS

THE NATIONAL PIPE AND SUPPLIES ASSOCIATION TO MEET IN PITTSBURGH, PA.

The National Pipe and Supplies Association will hold its next annual meeting on Tuesday and Wednesday, May 16th and 17th, at the William Penn Hotel in Pittsburgh, Pa., and the executive committee of the association will meet at the same place on Monday, May 15th, according to the official notice just issued by Secretary Geo. D. McIlvaine, Pittsburgh.

IRON PLUMBING SPECIALTIES MANUFACTURERS TO MEET IN CINCINNATI.

The Iron Plumbing Specialties Manufacturers' Association, which was formed last December, will hold its first quarterly meeting on Wednesday, March 8th, at the Gibson Hotel, Cincinnati.

NEW SUPPLY COMPANY IN NEWARK, N. J.

The Plumbers' Supply Co. is the name of a new concern which has just started in business at 291-293 Halsey Street, Newark, N. J.

WILL OPEN SUPPLY HOUSE IN WILKES-BARRE, PA.

J. D. Johnson Co., Philadelphia, Pa., is preparing to open a branch house of its plumbing and heating supply business at Wilkes-Barre, Pa., where suitable quarters with railroad siding have been secured. This branch will be in charge of Chas. H. Ringsdorf, who has covered that territory for some time past for this company.

J. H. BALMER CO. MOVES TO NEWARK, N. J.

J. H. Balmer Co. has moved from Passaic, N. J., to 67-69 Hamilton Street, Newark, N. J. The change was made necessary because of the expansion of the business.

THE MORGAN BRASS MFG. CO. NOW ITS NAME.

The Gem Brass Mfg. Co., of 2104-2106 Woodland Avenue, Cleveland, Ohio, has changed its name to the Morgan Brass Mfg. Co., according to official announcement just issued.

BUYS MANUFACTURERS' AGENCY BUSINESS.

Joseph B. Freund, 911-913 Stephen Girard Building, Philadelphia, has succeeded to the manufacturers' agency business of J. E. Willetts, who has re-entered the service of the Keystone Mfg. & Supply Co., of Philadelphia, as its general sales manager. Mr. Freund will call on the jobbing trade south of, and including, Trenton, N. J., and east of Pittsburgh, Pa., in the interests of the Acheson Mfg. Co., of Rankin, Pa., the Chicago Nipple Mfg. Co., J. P. Marsh & Co., and American Enamel Products Co., all of Chicago, Ill.; Fee & Mason, of New York City, and Union Canvas Goods Co., of Philadelphia.

NYE TOOL & MACHINE WORKS EXPANDING.

The Nye Tool & Machine Works, 108-128 North Jefferson Street, Chicago, has leased another floor in the building where this concern is located, giving it 10,000 sq. ft. additional floor space, all of which will be given over to manufacturing operations exclusively.

A. H. HILLS CO. IN NEW LOCATION.

A. H. Hills Company, of New York City, representing the Haydenville Co., of Haydenville, Mass., announces its removal from 50 Church Street to Room 2709, Grand Central Terminal Building.

GURNEY HEATER MFG. CO.'S EXECUTIVE OFFICES IN NEW LOCATION.

The Gurney Heater Mfg. Co., of Boston, Mass., has just announced that it has moved its executive offices and showrooms from 188-200 Franklin Street, to 93-97 Oliver Street, Fort Hill Square, Boston.

OPENS OFFICES AND SHOWROOM IN PHILADELPHIA.

The Ever Hot Heater Company, 214 Woodbridge Street, West, Detroit, Mich., announces the appointment of E. S. Thompson as its representative in Philadelphia territory. Offices and showroom have been established at 18 South Seventh Street, in that city.

HARRY VERBEEK CO. SECURES NEW WAREHOUSE.

The Harry Verbeek Co., 208 North Wells Street, Chicago, has just announced that it will move its warehouse stock to the Great Central Warehouses, 36th and Iron Streets, Chicago, on Tuesday, February 28th. The new location will give the company improved facilities.

COMPANY RECENTLY INCORPORATED.

The American Boiler Tube Thimble Co. has been incorporated in Providence, R. I., with a capital of $50,000. The incorporators are Edward F. Martin, Martin E. Murray, both of Providence; William J. Green, of Cranston, and John D. Cameron, of East Providence, R. I.

PFAU MANUFACTURING CO. ANNOUNCES NEW REPRESENTATIVES.

The Pfau Manufacturing Co., Cincinnati, Ohio, in a recent communication to "Domestic Engineering," names the following representatives in the different territories: Harry D. Grigg will handle the southern Ohio territory. Thomas A. Glenn, formerly with the Standard Sanitary Mfg. Co., is to be the company's representative in Indiana. J. L. Naderan, formerly with Good Mfg. Co., of New York City, has been

appointed to the Virginia, Maryland and District of Columbia territory. J. H. Patterson, one time representative of the Dayton Pump Mfg. Co., Dayton, O., will represent the Pfau Company in the Cleveland section, while Henry VonPhul will represent the Company in the Milwaukee district.

START PREPARATIONS FOR THE ANNUAL CONVENTION OF THE NATIONAL ASSOCIATION OF MASTER PLUMBERS.

Preparations are already being made by the Detroit Association of Sanitary and Heating Contractors for the annual convention and exposition of the National Association of Master Plumbers, which is to be held June 6, 7 and 8, in Detroit, Mich.

John S. Irvine, vice-president of the National Association, who is also president of the Detroit local association, has appointed his committee and great preparations are under way.

Quarters have been leased in the new General Motors Building, the largest building of its kind in the world, costing over $18,000,000. The total area is thirty acres and it has

General Motors Building, Detroit, Mich., Where the Convention and Exposition of the National Association of Master Plumbers Will Be Held June 6, 7 and 8, 1922.

accommodation for 6,000 tenants. There will be ample room to hold the convention and exposition under one roof. The space to be occupied for the National Exposition is over 500 ft. in length and extends the entire length of one block.

Floor maps are now being prepared and will be sent to manufacturers and jobbers in the very near future. Applications for space are already being received by the committee.

WHOLESALE PRICES GATHERED BY U. S. DEPT. OF LABOR, BUREAU OF STATISTICS, WASHINGTON, SHOW LITTLE CHANGE.

According to information gathered by the United States Department of Labor through the Bureau of Labor Statistics there was no change in the general level of wholesale prices from November to December. The Bureau's weighted index number, calculated from the average monthly prices of 327 commodities or series of quotations, stands at 149 for December as well as for the month before.

Farm products and foods again showed a downward tendency, the decrease being more or less pronounced for cattle, hay, hops, peanuts, butter, cheese, eggs, lard, lemons, oranges, and sugar. Slight decreases are shown also for cloths and clothing and for chemicals and drugs.

No change in the general price level is reported for metals and for house-furnishing goods. Fuel prices averaged slightly higher than in November, while the group of building materials, in which lumber has a preponderating influence, averaged 3 per cent higher. In the group of miscellaneous commodities, including among others such important articles as bran and millfeed middlings, linseed meal, lubricating oil, paper, manila rope, Mexican sisal, and tankage, the increase was over 2 per cent.

Of the 327 commodities, or price series for which comparable data for November and December were obtained, increases were found to have occurred for 89 commodities and decreases for 116 commodities. In the case of 122 commodities no change in average prices was reported.

Below are shown the index numbers of wholesale prices in the United States, by groups of commodities, as computed by the Bureau of Labor Statistics for the months named. The figures for the last named month are preliminary and subject to revision. The base used in computing these index numbers is the average for the calendar year 1913.

Index Numbers of Wholesale Prices, By Groups of Commodities. (1913=100.)

	1920	1921	
	December	November	December
Farm products	144	114	113
Food, etc.	172	142	139
Cloths and clothing	220	186	185
Fuel and lighting	236	186	187
Metals and metal products	157	119	119
Building materials	266	197	203
Chemicals and drugs	188	162	161
House-furnishing goods	346	218	218
Miscellaneous	205	145	148
All commodities	189	149	149

Comparing prices in December with those of a year ago, as measured by changes in index numbers, it is seen that the general level has declined 21 per cent. The greatest decrease is shown for house-furnishing goods, in which prices have fallen 37 per cent. Metals and building materials have decreased about 24 per cent, farm products 21½ per cent, fuel 21 per cent, and food 19 per cent in average price. Somewhat smaller decreases are shown for the remaining groups of commodities.

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by the "American Contractor":

$1,200,000. School and Shop Building, Saginaw, Mich., Board of Education.

$250,000. Temple, Chicago, Ill., Aurora Masonic Temple Assn.

$171,890. School, Dayton, O., Board of Education.

$150,000. Apartment Building, Chicago, Ill., Earl H. Henry.

$150,000. Office Building and Garage, Philadelphia, Pa., Geo. Wood Sons & Co.

$140,000. School, Washington, D. C., District of Columbia.

$138,000. Road Work, Beardstown, Ill., City of Beardstown.

$120,000. Garage, Peoria, Ill., Peoria Auto Parts Co.

$100,000. Club House, Cleveland, O., The Canterbury Club.

$100,000. Factory, Grand Rapids, Mich., H. E. Shaw Furniture Co.

$1,000,000. Club & Lodge Bldg., Cincinnati, Ohio, Cincinnati Lodge, B. P. O. E.

$350,000. Sewer System, Warren, Ohio, City of Warren.

$250,000. School, Bay City, Michigan, Board of Education.

$200,000. Apartment Building, Detroit, Mich., Sol. Braiker.

$160,000. School, Olivia, Minn., Board of Education.

$141,000. School, Detroit, Mich., Board of Education.

Personal Mention

W. A. Russell, president of W. A. Russell & Co., New York City, is on a business trip to the important Western jobbing centers.

John H. Seippel, manager of the Baltimore office of the Haynes Selling Co., Inc., of Philadelphia, spent some time at the company's home office last week.

Thomas Savill, treasurer of Thomas Savill's Sons, Philadelphia, is spending a few weeks in Bermuda, accompanied by Mrs. Savill.

S. S. Fretz, Jr., president of S. S. Fretz, Jr., & Co., Philadelphia, is spending the winter months at the Hotel Urmey, Miami, Fla., accompanied by his family.

R. G. Dobson, of J. B. Wise, Inc., Watertown, N. Y., left this week on an extensive trip to the great jobbing centers throughout the South, to study business conditions.

Southard Cutting, president of the Curtainless Shower Co., New York City, visited Philadelphia, Baltimore and Washington last week.

Jack Fisher, representing the Delaware Brass Co., of Delaware, O., was in Philadelphia last week.

E. H. Webster, vice-president of the Goetz Brass Co., of Chicago, has just returned from an extended business trip to the jobbing centers throughout the East. He reports a marked improvement in actual business and anticipation, compared with this season last year.

C. P. Curtis, special representative of the J. A. Sexauer Mfg. Co., Inc., of New York City, is on a trip through New York State and Pennsylvania, calling on some of his many old acquaintances in the trade. Mr. Curtis was formerly connected with the Good Mfg. Co., of New York City.

John F. Riley, for several years connected with the H. Mueller Mfg. Co., of Decatur, Illinois, has just joined the sales force of the Glauber Brass Mfg. Co., Cleveland, O. Mr. Riley will make his headquarters at Wilkes-Barre, Pa., and he will cover his old territory, the northeastern part of Pennsylvania and the southern part of New York State.

B. D. Thomas, formerly with Froelich Bros., Philadelphia, Pa., and the National Radiator Co., Trenton, N. J., has been appointed manager of the heating and plumbing supply department which the Manufacturers Selling Co., Trenton, N. J., is about to open in connection with its mill equipment and steam fitting supply business.

A. H. Jolaffe, of Minneapolis, and **E. A. Stark,** of Seattle, Wash., passed through Chicago this week on their way to Detroit, Mich., to attend the annual meeting of the branch managers of the U. S. Radiator Corporation. **Harry N. Booth,** manager of the Chicago branch also went to Detroit to attend this meeting.

James W. Farrell, 5647 McMahon Avenue, Philadelphia, announces that he will call on the jobbing trade in Pennsylvania, southern New Jersey, Delaware, Maryland, District of Columbia and Virginia, in the interests of S. S. Fretz, Jr. & Co., Philadelphia, Pa.; John Maddock & Sons, and Monument Pottery Co., Trenton, N. J., and Burlington Brass Co., Burlington, Wis.

Declaring That the Right to Work is equal with the right to strike and that he would not permit labor unions to break up the "open shop" Attorney General Daugherty announced this week that no legislation would be needed to enable him to act in the case of a strike in the bituminous coal fields that is threatened for April 1, when the present wage agreements expire.

Twenty Years Ago in "Domestic Engineering"

Saturday, February 8, 1902.

Best Month in Twenty Years.—The Toronto (Canada) Hardware Manufacturing Company reports that January was the best month ever experienced in the firm's existence. Over sixty men are at work at present.

New Rules.—The master plumbers of Memphis, Tenn., have adopted the following shop rules: "The hours of work are to be from 8 o'clock a. m. to 12 m., and from 1 p. m. to 5 p. m. All employes are required to be in the shops or on the job, with coat off and at work promptly at and during these working hours, and wages will be settled for by the hour. A first grade plumber shall be paid $3.50 per day; second grade, $2.50 per day. All apprentices shall serve five years at this trade before receiving journeyman's wages. All overtime after 7 o'clock p. m. shall be paid for at the rate of time and one-half."

Strike at Memphis.—On account of the foregoing rules, the journeymen plumbers of Memphis, Tenn., have walked out, about one hundred men being affected.

In Better Quarters.—The Humphryes Manufacturing Co., of Mansfield, Ohio, has emerged from its recent fire with a thoroughly modern plant.

New Tube Company.—The Juniata Tube Company, of Wilmington, Del., has been incorporated to manufacture and deal in steel and iron tubing. Capital, $800,000.

Li Hung Chang Likes Plumbing.—When Li Hung Chang, representing China, was in New York, he stopped at the Waldorf. One day he sent for the manager and said: "I want you to go to China and build for me a hotel just like this." "Why," asked the surprised manager, "do you wish to have such a hotel as this?" "So that I may have hot water whenever I want it," replied Li Hung Chang.

Baths By Law.—Miss Harriette A. Keyser, a prominent club woman of New York, is advocating compulsion in the taking of baths. She stated that bathtubs in tenement houses are used as cradles, refrigerators and garbage receptacles. Miss Keyser holds that the Board of Health has the power to enforce the proper use of bathtubs. Other club women believe that more good can be accomplished by education than by legal enforcement of bathing.

Death.—John Cooper, one of Boston's oldest plumbers, died at his home in Roxbury on January 30. He had been in business in Boston since 1869.

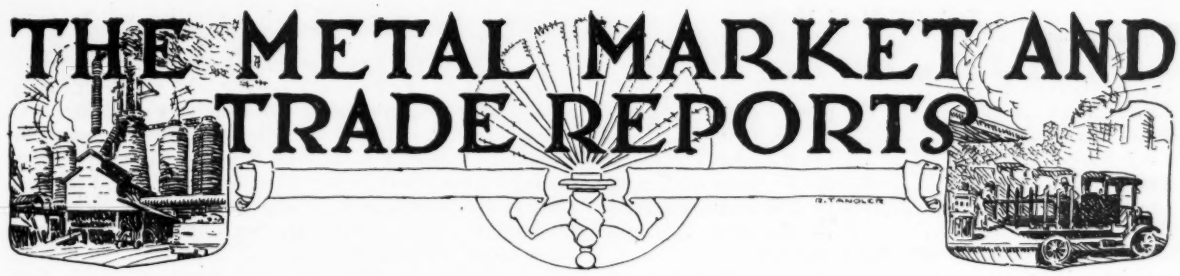
Want Plumbing Inspector.—A plan is on foot among the master plumbers of Bangor, Maine, to get through the city council an ordinance for the appointment of an official plumbing inspector.

Trying to Get a Nine-Hour Day.—The journeymen plumbers of Winsted, Conn., are organizing a union, the main object of which is to get a reduction in working hours from ten to nine per day.

Earliest Hot Water Heater.—The earliest known hot water heating is curiously traced to Greenland. As far back as 1516 it was reported that cooking and heating were being done by water piped from a hot spring.

Building in the Larger Cities.—During 1901 in thirteen American cities the sum of $241,379,764 was expended for 48,725 new structures, as against $138,885,820 in 1900 for 37,064 buildings. This shows a general increase of 74 per cent. The most notable increase was that of St. Paul, its percentage of gain being 259. The lowest percentage of increase—only 15 per cent—was in Allegheny, Pa. New York heads the list with the largest total of building, with Chicago second, and Philadelphia third.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Considerable nervousness was shown in the wire and nail trade last week over reported shading of the market base to $2.40 and buyers began to curtail or defer orders. The Pittsburg producers, however, were steadfast on the $2.50 base and are holding tenaciously to that base on all new business, even where it involves a substantial volume of business. From the facts reported to the trade from consumers, offers of $2 a ton concession in nails have been mostly from outside of the immediate Pittsburg district. The tenders have been made west of Pittsburgh in the main. Plain wire prices have not been shaded and are quoted at $2.25 almost uniformly. Demand for wire, however, has been quiet and the need of additional orders is shown in the competition that is developing on all inquiries of moment.

The sheet and tin plate markets were steadier last week. Black sheets especially were more uniform and producers report a generally higher average of operations in the Pittsburg district. Last week the leading interest increased sheet production by putting on its Farrell sheet mills in full. Independent interest increased operations at Canton and in one case started an idle sheet plant there on better than 50 per cent basis.

Tin plate buying showed signs of renewed interest and some inquiries involving as much as 10,000 boxes for first quarter delivery were taken up.. The tin plate market has stiffened to $4.75 per base box. There are no longer reports of shading of this base even from warehouse stocks.

The improvement has developed in the buying of cold and hot rolled strip and in the former the volume of new business has been especially encouraging, though sufficient new business has failed to come to stiffen the market base to better than $3.50. The fact is, however, that $3.50 is being held right and cannot be lowered, as was the case a fortnight ago.

Better inquiries for merchant bar and semi-finished steel covering the second quarter needs of consumers are noted.

New York brokers report scrap weaker with prices falling off. Some heavy melting steel has been shipped to Pittsburg and Johnstown in spite of the high freight rates, $14, delivered, representing the market. The flurry of buying from eastern Pennsylvania mills of a week ago has subsided. Railroad heavy melting steel has dropped 50c to $7.50 to $8, New York with yard grades 50c less. Cast scrap is sold at $16 to $17, delivered, nearby. Some pipe has been sold at $12, delivered, eastern Pennsylvania.

Bids will be opened this week for contracts for building the New York-New Jersey vehicular tunnel. The largest item is the supplying of 105,000 tons of cast iron segments, which will form the body of the construction. The bulk of this material will be cast from foundry pig iron, though some cast scrap may be included in the melt. The nation-wide interest in this contract is surprising, furnaces as far south as Alabama and as far west as Ohio being concerned in the supplying of pig iron. The award of the segments may be made to one foundry or may be divided among several. Those foundries who have made segments for other tunnels under New York's rivers will be favored to the extent that they have had experience and equipment behind them.

Only a little iron is either being shipped from or received at Atlantic ports. A few carload lots have been sent to South America, where competition with foreign brands is less keen. The present low priced state of the domestic market precludes foreign iron entering to advantage.

The feeling among foundries is better and it is being passed along to the blast furnaces. Some foundries are increasing their melt; none are falling behind. Prices for pig iron are quoted as follows:

No. 2 Pittsburg	$20.96
No. 2X Philadelphia	21.34 @ $21.76
No. 2 Southern, Birmingham	15.50 @ 16.00
No. 2 Chicago	18.50 @ 19.00
Basic Valley, furnace	17.75 @ 18.00
Bessemer, Pittsburg	21.46

Copper.

Price tendency in copper was down all of last week. It is now possible to buy ordinary amounts of electroylitic from outside dealers at 13½c delivered and the larger producers no longer name 14c, but have generally settled upon the 13¾c as the nominal quotation. They would be willing to sell at 13⅝c, at least for first quarter. On the face of things prices will not rise for some time. Seven mining companies, with capacity of 80,000,000 pounds a month, have resumed operations, or will soon do so, their capacity being about 45 per cent of total domestic output. Needless to say, they will not operate full. Another discouraging factor is the slow export movement in January, which is estimated at about 30,000,000 pounds, which is only half the December shippings.

Tin.

The rise in tin on the London market the first of last week was more than offset by the declines of the last three days of the week, which averaged about 2 pounds sterling a day. The rise of sterling exchange partially compensated for this. The market sees a demand for spot because of the conditions of supplies, there being 8,755 tons afloat. Straits tin, spot, is nominally 31½c, with prompt about ¼ cent lower. Arrivals for the month total 350 tons.

Lead.

Though the lead market has been declining at London, prices in New York remain firm. The American Smelting and Refining Company continues to quote $4.70, both New York and East St. Louis. This price also respresents the outside market for New York, East St. Louis being quoted at from $4.40 to $4.45. A 26 per cent reduction in freight rates on lead between some points in the Joplin district and other points in the Middle West take effect on the 7th of this month which ought to help the market some.

Zinc.

A 5-point fall was suffered on the New York exchange on Friday. New York delivery is now quoted at $4.80. On the East St. Louis basis 4½c was asked for spot and February, with a selling price of $4.45.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum Powder	60 to 61 cents per lb.
Aluminum (in 50-ton lots) 99% and purer	20 cents per lb.
Antimony, Chinese brands	4.37½ cents per lb.
Nickel, Ingot	41 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	10⅞ to 11⅛ cents	11⅞ cents
Copper, light	8⅝ to 8⅞ cents	9⅞ cents
Brass, heavy	5¼ to 5½ cents	6¼ cents
Lead, heavy	3⅞ to 4 cents	4¼ cents
Tea lead	2½ to 3 cents	3½ cents
Crucible copper	11¼ to 11½ cents	12¼ cents
Zinc	2½ to 2½ cents	3 cents

Chicago Old Metal Market.

Chicago Wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	5 to 5¼ cents	6¼ cents
Brass, light	4 to 4½ cents	5½ cents
Red brass	8 to 8½ cents	9 cents
Copper, heavy	9½ to 10 cents	10½ cents
Copper, light	7 to 7½ cents	8½ cents
Lead, heavy	3½ to 3¾ cents	4 cents
Zinc	2½ to 2¾ cents	3¾ cents

In The Chicago Supply Market.

Chicago, February 8.—No changes have been reported in the Chicago market during the past week. Manufacturers' representatives interviewed were in general inclined to classify business as "a little slow" or, at the best, "picking up slowly." There have been no price changes of any importance for the simple reason that there has hardly been enough business to influence prices. With manufacturers operating at little or no profit, any further reduction made in an attempt to stimulate buying is generally considered out of the question; and with jobbers buying lightly any increase in prices seems equally improbable.

Orders placed are, in general, for immediate delivery as the jobber is not buying until he has first found a definite outlet for his stock. The general feeling of optimism towards spring business is still alive, but most of the enthusiasm in supply circles is for what is coming, rather than for what is now on hand.

The unsettled local situation in Chicago is having a depressing effect on companies that depend to a large extent on the Chicago trade for their outlet.

"Things are rather slow," said J. M. Weil, of the Weil-McLain Co. "We are still waiting for labor to settle down. Ordinarily this would be a good season for the sale of roughing, in material, but just now there is very little of that class of stock moving. Plumbing and plumbing supplies are down almost to the bottom now as far as prices are concerned. If other building materials and labor would come down in the same proportion it would make things just right for building."

Sales Manager R. M. Nelson, of the Sloan Valve Co., adopts a sanguine view of the outlook. "January was a pretty good month compared to January, 1921," he said. "If we take the first month as an indicant I think business will show an increase of from 50 to 100 per cent over last year."

In the opinion of A. S. Lindeblad, of Sanborn & Lindeblad, who has recently returned from a business trip to the East, "business is somewhat slow in Chicago, but in general it is no worse here than in eastern markets. There has been little change in the market in the past week or so, prices having held pretty even since the first of the year reductions."

J. B. Murphey, vice-president of Kohler Co., expressed himself as fairly well satisfied with the general trend of business. "Things are going along pretty well," he remarked. "Enameled ware is finding a pretty good market, although the labor trouble in Chicago has affected a pretty wide radius and it will be better for all of us when it is finally settled. But to my mind business is bound to improve. The farmer has taken his loss and now farming seems to be on an upward trend. There is still plenty of money in the country; many more homes are needed to house properly our population and the logical outcome of such a situation will be more building."

In the New York Supply Market.

New York, N. Y., February 4.—The local plumbing supply market, while displaying some of the dullness which seems to be inseparable from this time of the year, is characterized by a remarkable optimism. This has been noted in several previous reports but it may be stated in all sincerity that it becomes more evident every week. Every one is looking forward to the spring. "Then," they say, "we'll turn the corner and begin to get really busy again."

Prices during the week have stood firm in all supply lines with the exception of brass manufactured goods, where there has been a slight shading by individual firms, notably in Newark and other outlying parts. Otherwise, it appears that the market feels it has already "dressed its window" sufficiently and that the next move is up to the plumbers. The plumbers in turn say the next move is up to the builders and real estate interests. The whole situation waits on the building boom that is promised with some apparent confidence for spring.

Passing on to individual lines of supply, soil pipe meets a rather sluggish demand in spite of prices which in the heavier lines make production scarcely worth while. Wrought iron and steel pipe is in the same position as to demand although prices have remained more stable and are at a more satisfactory level than in the case of soil pipe.

Brass manufactured goods, as already stated, show a certain amount of uneasiness this week, declines being noted in several cases though only on a small scale. Local supply houses view the situation differently, some saying the market is shot to pieces while others see only that it is a buyer's market and act accordingly. One New Jersey house reports that it has stocked heavily in brass goods this week, convinced that future price moves will be all in an upward direction.

Enameled goods, bath-room equipment, and so on are all steady as to prices in the face of a limited demand. It should, however, be noted—and this applies to all lines of supply—that the demand is only limited as compared to other periods of the year. When the comparison is taken with previous last weeks in January, the consensus of opinion is that the amount of business offered is almost a record. Men who have been in the supply business for thirty or forty years say and they cannot recall a year when demand persisted through the winter with such steadiness.

Heating equipment is more or less in the doldrums. There is a certain amount of repair work going on but not much call for new installations or equipment. That, of course, is merely another way of saying that it is mid-winter, as one jobber expressed it.

"We're like the rest of them," he said hopefully; "we're waiting on that big building boom."

"We don't note very much activity in any supply lines this week," said Thomas Wade, manager for R. J. Donovan; "but we don't expect much at this time of the year. Compared to other last weeks in January we are doing very well indeed. Every one seems decidedly optimistic about the outlook for spring and that's a good sign."

"We're quite satisfied," said a representative of the U. S. Sanitary Manufacturing Co. "The volume of business isn't startling—we don't expect it to be just now—but it's growing steadily. We figure out that spring is going to see one of the liveliest booms New York has seen for a long time."

"I don't remember when there was so much optimism in the air," said the assistant manager of the Curtainless Shower Co. It's like an undercurrent everywhere one goes. So far as our business is concerned it may be of interest to state that we are utilizing your Bath-a-Day Campaign articles with considerable success as material for selling talk. We make a point of commending them to our agents, and they seem to get results with them."

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

Last week William J. Curran, president of the Building Trades Council, announced that the ten insurgent unions would go back to work and abide by the Landis awards. The reason for this, according to union leaders' statements, was that the unions desired to reinstate themselves in public regard by going back to work under the terms of the agreement.

Building permits for the first week in February dropped to $1,286,000 valuation on 56 permits issued. Although this is better than last year, it represents quite a slump from last week's $2,278,000. Contractors are inclined toward a pessimistic view of the local situation this week, especially since the unions' offer to return to the fold has been flatly rejected by the Citizens' Committee.

G. Albin Nilson & Co., 319 North Clark Street, has the contract to install the plumbing in a 42-apartment building at Winthrop and Glenlake.

E. J. Claffey & Co. will install ventilating and a vacuum heating system in the high school building now being constructed on Irving Park Boulevard. The building will be fireproof in construction, of brick and stone, the heating and ventilating contract amounting to about $20,000. Gravity steam heating systems will be installed in two 6-flat buildings by this company. One of these is being erected for C. W. Edwards on Pratt Boulevard and the other for A. E. Bush on Chase Avenue. Fred V. Pather is the architect on both buildings. Each apartment will have seven rooms, sun parlor

W. S. Eadie, S. Erman and Charles Watson, all of Chicago.—From "Domestic Engineering" Photo, taken at the recent Convention of the Illinois Master Plumbers' Association.

and two baths. The heating contracts will amount to about $3,000 apiece.

The field laboratory building for the horticultural department of the University of Illinois will be heated and ventilated by E. J. Claffey & Co., at a cost of about $15,000. James White, of the university faculty, is the supervising architect.

The E. Baggot Co. has several good plumbing contracts on its books at the present time. One of these is for the complete plumbing installations on seven buildings, to include dormitories, hospital wards and refectory for the state hospital at Alton, Ill. The plumbing on this job amounts to $49,000. A seven-story addition to the factory of the Elgin Watch Co. will be fitted with plumbing by this company at a cost of $33,000. The building is to be of brick and concrete, 50x700 ft., and will cost in the neighborhood

Ed. Heister, of Harrisburg, Ill., F. A. Finder, Champaign Ill., and H. M. Heister, of Harrisburg, Ill.—From "Domestic Engineering" Photo, taken at the recent Convention of the Illinois Master Plumbers' Association.

of $750,000. Other contracts recently awarded to the Baggot Co. are: In Glencoe, a residence with four baths to be installed, $6,200; a residence on Astor Street, near North State, $4,900, and a remodeling job on the Edson Keith building the plumbing on which will be $6,500.

Luder Plumbing Co. has been awarded the plumbing contract and E. J. McDonough the heating on a $300,000, 48-family apartment building now in course of construction in Oak Park, for Harry J. Kusel, 35 South Dearborn Street, Chicago. Thomas B. Bishop is the architect.

B. Stevenson has secured the heating contract on the $200,000 apartment building to be erected at Winthrop and Glenlake.

W. A. Bunge, Oak Park, will install both plumbing and heating in an addition to a bakery in Oak Park.

E. W. Sproul & Co., 2001 West 39th Street, is taking bids on all sub-contracts for a $1,250,000 cold storage and ice plant to be erected for the Kansas City Cold Storage and Warehouse at Kansas City, Mo.

John Glotzbach, 139 West Madison Street, has secured the plumbing contract on a store and office building to be constructed at 1928-30 Irving Park Boulevard. The heating contract has been awarded to C. W. Johnson, 644 Washington Street.

Joe Epstein, formerly at 1583 Clybourn Ave., Chicago, has moved his plumbing business to 1329 South Kedzie Ave.

Solomon-Waterton, 35 S. Dearborn St., are taking bids on all sub-contracts on residence and garage to be built for M. Tausig, 304 South Wabash Avenue.

John A. Lundstrum Co. will receive bids on plumbing and heating for a three-story, six-flat, apartment building to be started soon at 1435 Winona Avenue.

Other Cities in the State.

The citizens of Walnut have voted a $90,000 bond issue for the erection of a new high school building. It is the intention of the school board to start work on the building this summer. Architects Aldrich & Aldrich, of Galesburg, will prepare plans and specifications.

The Arthur W. Murray Co., of Hoopeston, tendered the successful bid on the contract to install the plumbing, heating and ventilating systems in the township high school soon to be erected at Toulon. The contract amounts to $25,000.

L. A. Berner, of Bloomington, Ill., and E. E. Pifer, of Eureka, Ill.—From "Domestic Engineering" Photo, taken at the recent Convention of the Illinois Master Plumbers' Association.

Fred W. Schlie, Decatur, formerly a member of the firm of Royer & Schlie, now dissolved, has opened a plumbing and heating business at 545 North Water Street, in that city, under the name of Fred W. Schlie Co.

American Building Exposition, Cleveland, Postponed Until April.

Postponement of the opening date of the American Building Exposition, Cleveland, from February 22 to a date in April, probably not later than the 18th, is announced by reason of the insistence of Mayor Kohler that the new city auditorium be complete before it is formally accepted by the city and offered for exhibition purposes. The exposition is to be the first public attraction in the new building.

The exposition, originally scheduled to open on January 4, has twice been postponed, but with the date now fairly definitely fixed the management expects speedily to close out the remaining unsold space, approximately $15,000 worth of an aggregate of $100,000.

Both floors of the auditorium will be utilized, and from the variety of exhibits already booked the show promises to be one of the most complete and extensive of the year. The largest individual exhibit will represent an outlay of approximately $25,000.

The exposition, sponsored by the Builders' Exchange, is being put on upon a co-operative basis, the sole object being to stimulate building interest in the Cleveland district.

The Building Situation in Cleveland.

Cold weather has slowed down demand for both plumbing and heating here. Big projects are being brought to a close, and a good deal of figuring is being done on new work. In the main small orders for housing and similar jobs make up the bulk of new business at the moment, and contractors do not look for improvement beyond this until the winter weather breaks up. A sizable volume of business as a whole has been booked since the beginning of the year, however, and many new housing developments are being planned by realty operators and independents. Two in the Heights section will be started soon, calling for a total of 50 dwellings. The model town project of the A. B. Smythe Company will go ahead at an early date, this including a development at North Olmstead with commercial and residence buildings.

Indiana

Indianapolis.

An educational campaign, consisting of a series of advertisements written in the interests of the plumbing trade, will be started in Indianapolis about February 12, by the Indianapolis Master Plumbers' Association. Plans for the campaign were perfected at a recent meeting of the association at the Denison Hotel. It is understood the campaign will continue for about six weeks. "We feel that our work is essential to the welfare of the community and it is our desire to arouse public interest so that the practical man or woman can see exactly what good modern plumbing has accomplished," said Arthur Paetz, president of the association.

About 200 Indianapolis master plumbers, supply house representatives and city and state officials were guests of the Indianapolis Water Company at a dinner at the Chamber of Commerce, Monday night, January 30. The purpose of the dinner was to foster a closer spirit of co-operation between the plumbers and the company, and to help the company in its ambition to give Indianapolis one of the best water supplies in the country.

Following the dinner, speeches were made by company officials and plumbers. C. L. Kirk, vice-president and general manager of the water company, in the first speech of the evening, traced the history of the company and explained the details of its operation at the present time. H. E. Jordan, superintendent of filtration, spoke on "The Purification of the Public Water Supply," and said there were fewer germs in the water used at the banquet than in a piece of Limburger cheese.

Other speakers and their subjects were: P. J. T. Jeup, chief engineer of the water company, "The Indianapolis Water Company's Program for Future Construction"; J. F. O'Donnell, "Good Plumbing, an Essential to Good Water Service"; John L. Elliott, city civil engineer, "Our 1922 Program for Municipal Improvements in the City of Indianapolis"; Dr. W. F. King, assistant state health commissioner, "The Value of Sanitary Conveniences in Decreasing Sickness" and Carl Wilde, director of service of the Indiana Public Service Commission, "Consumers' Complaints."

Three-minute talks on the value of co-operation between plumbers and the water company were given by the following plumbers: George F. Kirkhoff, Edward A. Strong, Frank Callon, Charles A. Holtman and William Beinberg. Frank C. Jordan, who was toastmaster at the dinner, introduced the city and state officials who were present. The Rev. M. E. Runden, pastor of the Seventh Presbyterian Church, pronounced grace before the dinner.

Building Contractors in Favor of a State Building Code.

A resolution favoring a state building code was passed by members of the Associated Building Contractors' Association at the closing session of their annual convention at Evansville, last Tuesday and Wednesday. The association voted to work with architects and other state organizations in drawing up a uniform code for the state and will present the matter at the next session of the state legislature.

Other resolutions adopted recommended that there shall be no strikes or lockouts pending any question or dispute between employers and employes, but that the association recommend or endeavor to create, with the co-operation of the

employes and the contractors, the necessary means of settling all questions, disputes or differences through joint arbitration committees, with an equal representation of both employers and employes. The resolution provided that there should be no cessation of work by either party pending the arbitration of the question at issue.

It was further decided that all jurisdictional disputes shall be settled on the basis of the decision of the national jurisdictional board, and where decisions have not been made by this board the dispute shall be referred to the board for settlement. The question of changes in the constitution was discussed a considerable time, and finally it was decided to refer the matter to the counselor for the state association and the executive committee. They will report in two months.

Frankfort.

As a result of an investigation conducted recently by a special committee of the city council at Frankfort, Wood Unger, city attorney, has been instructed to draft an amendment to the present ordinance pertaining to the bonding of plumbing and electrical contractors. This action was taken after the committee had reported that its investigation disclosed that bonds of several contractors had been filed years ago and are not valid at this time. Under the proposed amendment, every plumbing and electrical contractor in the city will be required to file new bonds with the proper authorities if he expects to continue in business. The ordinance will request that the bonds be renewed each year.

Gary.

More than $47,000 was expended in building operations in Gary during the month of January. This is more than $100,000 less than was expended during the same month in 1921, when permits valued at $154,550 were issued, according to the report of E. R. Erickson, city building commissioner. According to the report there were 42 permits issued in January of last year, as compared with only 17 this year. Of the permits issued last month, eight were for the erection of new buildings at a total cost of $39,300. Nine permits were issued for alterations and repairs at a total cost of $8,031. Permits were issued during the month for the building of three residences at a total cost of $28,500, two garages, $2,500; one hotel at a cost of $4,000, and a bakery at a cost of $3,000.

Fort Wayne.

Construction work costing $135,410 was started in Fort Wayne during the month of January, according to a survey of the records in the office of the city building commissioner. Forty-two permits were issued for building work at an estimated cost of that amount. This figure, though not half as large as the cost of construction in December, 1921, denotes a marked gain over the same month of a year ago. Expenditures for building in Fort Wayne in January, 1921, amounted to only $93,325, and in December the total outlay for construction work was $279,310.

Seventeen or more than one-third of the permits issued last month were for the erection of new houses. Only eight were granted for the erection of garages. The records show that January is the first month in more than a year in which building work was started on more than twice as many homes as garages. The largest single piece of construction work started during the month was a new office building at 126 East Wayne Street. It will be erected at a cost of $26,000.

South Bend.

Increased building at a greater average valuation was shown in South Bend during the month of January as compared with the corresponding period of a year ago. The statistics, according to George A. Davis, building commissioner, indicate a healthy growth in the city's building industry. There were 106 permits issued during the month at a valuation of $173,762, as compared with 60 permits and a valuation of $47,062 for January 1921. Permits issued included twenty-two new residences last month as compared with only six in the same month of last year.

Kentucky

Louisville and Vicinity.

Mild weather is encouraging building somewhat, but things are not really active as yet in a big way, and it will probably be mid March before some of the expected large jobs start coming through. Most of the master plumbers have all the small work that they need and things as a whole are running along smoothly.

The Louisville Master Plumbers' Association is meeting regularly, and interest is being shown in the work, and the organization is getting along nicely. Plans are being discussed for the annual convention of the state association in the spring, and a well balanced program is promised.

General business is about holding its own with that of last year, bank clearings to February 4 showing $120,201,314 for this year as against $123,624,842 for the same period of 1921. Considering reduced values of many commodities business is probably even a little better than it was last year for the same period.

There was an interesting exhibit of plumbing goods at the National Health Exposition, January 31, to February 8, the Louisville Master Plumbers' Association co-operating to put in the exhibit, and handle it.

You might scare a plumber with a gun, but you can't fool him with a monkey wrench held as a gun. This was a lesson learned by Ernest Hall and Raymond Hart, who endeavored to hold up W. J. Warren, master plumber, as he was returning to his home, 832 West Broadway. Mr. Warren saw the wrench, and started in to fight for his rights. A couple of policemen were attracted to the scene, and the two holdup men were made guests of the city.

Haller & Zehnder have the contract for remodeling the plumbing in the Capital Hotel, 315 East Market Street, including 31 basins, two closets and two baths. The concern also has some work for the L. & N. Railroad.

The Welker Plumbing Co. has a good remodeling job for Dr. J. E. Grant, 1162 South Third Street, including installation of 7 closets, 5 baths, 5 basins and 7 sinks.

Georgia

Atlanta.

Business in Atlanta is improving considerably. The building permits for the month of January totaled well over $900,000.00.

The outlook for 1922 is very bright. One large corporation is going to spend nearly $100,000 in enlarging its plant. The city expects to expend $1,500,000 on school buildings during 1922, and all the architects are busy with smaller buildings and residences.

Bids for the plumbing and heating in the $250,000 addition to the hospital being built at Emory University were opened and it was found the Loftis Plumbing Company, of Atlanta, was the low bidder for the plumbing and heating at $28,690.50. This company was therefore awarded the contract.

Preston Hook has severed relation with the Hart & Crouse Co. and has joined the John Douglas sales force. He will maintain offices at 1107 Candler Building.

Gresham Jackson Co. has secured the plumbing contract on the office building being erected by A. K. Adams for Mrs. Morris Brandon. The steam heating will be installed by the Boatenreiter Plumbing Co.

A Popular Hudson Fixture

The HUDSON Exposed Combination Shower and Needle Bath for Recess

Catalog No. 21 shows this as well as our complete line of Showers and Bath Fixtures. Write for it.

Hudson Brass Works
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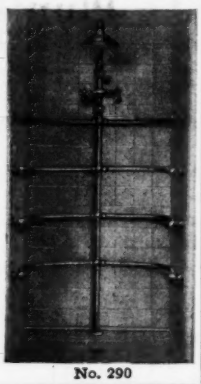

No. 290

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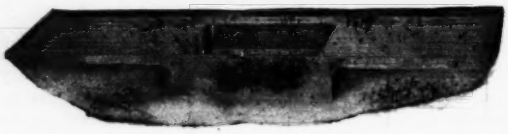
Pantry Sink with Drainboards



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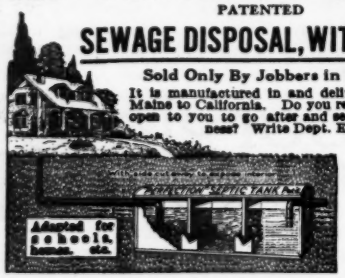
The "Perfection" Septic Tank
PATENTED
SEWAGE DISPOSAL, WITHOUT SEWERS



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It is manufactured in and delivered from 27 cities, from Maine to California. Do you realise the big opportunity open to you to go after and secure good profitable business? Write Dept. E for detailed information.
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Paragon Sill Cocks

Plumbers who want the best appreciate Paragon Quality

EVERY product we manufacture measures up to the standards we have maintained for twenty years. Sill cocks often reflect the quality of the plumbing throughout the building. Insist on Paragon quality products.

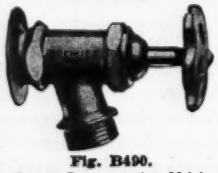

Fig. B490.

Your Jobber Will Supply You
The Vulcan Brass Mfg. Co.
Cleveland, Ohio
Eastern Representative: Melvin A. Rosenberg, 108-10 W. 34th St. New York City

New York

Defeat Plan to Eliminate Back-Venting in New York City.

A proposal to do away with back-venting of drainage as stipulated in building regulations for Greater New York was defeated last week at a public hearing before the Board of Standards and Appeals, meeting at the Municipal Building. Ernest Flagg, architect, who designed the Singer and many other imposing structures, was the lone champion of the proposed amendment, which he fathered on the argument that "the present requirement that every trap be ventilated to the roof, to prevent syphonage, is a heavy tax on home building and all other construction." He argued that this stipulation was unnecessary provided a reduction nozzle were connected up from flushing tanks and other fixtures to discharge branch-pipes at least 40 per cent greater in cross-section than the connecting pipe, provided also there were not more than four fixtures to the branch. He favored a back-vent to the roof on the last fixture of a battery of three or more, which, discussion developed, is already permitted as an alternative arrangement by present provisions of the building code.

After having been fairly smothered by opposition coming from superintendents of the building departments in several boroughs, also by objections of the Board of Health and of William J. Flynn, representing the master plumbers of Brooklyn, Mr. Flagg was willing to have his proposed amendment limited to three-story houses.

Fire Chief Kenlon, a member of the board, of which W. E. Walsh is chairman, favored possible further experimentation with small installations, to see whether they could be made practicable under the Flagg scheme. "I am convinced, however, that the evidence appears overwhelming against the plan so far," he said.

The gist of Mr. Flagg's contention was that it is impossible to produce syphonage of a drainage system (which would empty the traps and break the water-seal, permitting gas fouling of the system), unless the stack-pipe were completely filled. Testimony offered by various representatives of plumbers' unions, engineering concerns and the New York Department of Health, was to the effect that back-pressure from "air-binding" is inevitable in plumbing systems of any magnitude which are not freely back-vented, and that the down-suction produced by the discharge of a single bath-tub a few floors above a given branch-pipe would not only pump that pipe empty, including its attached traps, but would force water, or sewage even, like a miniature geyser into first floor bath-tubs.

Mr. Flagg made sure that the hearing would be a lively one by writing letters to newspapers outlining the situation as he saw it. The letters, which got a sharp rise out of the plumbers, and were doubtless accountable for a rather ireful by-play of claims and counterclaims, appeared before the hearing. One appearing in the editorial page of the New York *Evening Post* announced the hearing, and went on to say: "In the small house it (the cost of back-venting) frequently amounts to half the cost of the drainage system. The proposed amendment is based on the fact that syphonage cannot occur in a pipe unless the pipe is full. So that instead of the expensive vent system now required it is simply necessary to so arrange the piping that the outlet from the trap all the way to the main stack is so much larger than the inlet that the one cannot be filled by the other. Thus the cost of the elaborate system of back-airing may be saved.

"I made application for this amendment and constructed an apparatus on my place at Dongan Hills, Staten Island, where the necessary tests might be made as the law required. The test simply amounted to a test of one of the laws of

nature. It was made Friday, January 20, and there were present the chairman of the Board of Standards and Appeals, the superintendents of buildings of the several boroughs, representatives of the Health Department, Fire Department, plumbing organizations, and others. Naturally, the test was successful. It was like testing whether water will run down hill.

"The matter now comes before the Board of Standards and Appeals for action. It is of importance because, if the amendment is adopted, a great and unnecessary tax will be lifted from building. The plumbers are opposed to it, as they would be to anything which interfered with their work. Publicity will prevent the matter from being sidetracked. It is hardly necessary to say that I have no pecuniary interest in this matter except that I would benefit as all others would. I ask your co-operation."

At the Dongan Hills test, according to details given in a committee report read and passed by the chairman, two trap-installations about nine feet apart, vertically, were employed. Mr. Flagg contended in his verbal argument later that he was so rushed for time to erect a demonstration apparatus that he had not time to make proper preparations, and was unable to put in glass traps to show how the water-seal was maintained. At any rate, as a practical proposition, the committee was unanimous in turning the proposition down, and the board, following the hearing, concurred.

A rather comical complication in parliamentary procedure occurred when various representatives of plumbers' unions arose and announced that "we concur in the finding of the board," under the impression that the committee report was final and that the doom of the Flagg plan was cut-and-dried. Chairman Walsh hastily reminded them that the formal action of the body was yet incomplete, and that they were out of order.

The various delegates then amended their remarks to the effect that they opposed the amendment.

Mr. Flagg, in the course of defending his plan, declared that the plumbers opposed it because it meant a considerable reduction in the cost of plumbing to the householder. Mr. Flynn emphatically disavowed any such motives, and said that the plumbers were present and voting "no" out of desire to protect the public health and welfare from an impractical and insanitary scheme. Mr. Flagg reiterated his contention that none but a full drain-pipe can be siphoned, as a prime law of physics, and dared anyone present to go on record to the contrary.

A. E. Hanson, representing a consulting engineering concern, then stated that experiments had proven that siphoning of traps frequently occurred without absolute filling of the stack-pipe. Pros and cons flew like shells over No Man's Land for at least an hour, and both master and journeymen plumbers waxed warm in their arraignment of Mr. Flagg as a theorist.

The only semblance of support he received came at this juncture from J. P. Blair, who admitted that as a member of the War Industries Board he had knowledge that practically all government plumbing during the war period was put in without back-venting, "due to the desire of the government to save metals."

Among those appearing at the meeting were William J. Flynn, of the Master Plumbers' Association, of Brooklyn; Joseph Taggart, American Society of Sanitary Engineering; Patrick Drew, representing Local 463, Journeymen Plumbers; J. P. Blair, James F. Elliott; John F. Chandler, Plumbers' Local No. 1, Brooklyn; John L. Williams, John Koken and John Hassett, of Local 463; Lawrence J. McDermott, for the journeymen, and Dr. Shears, who on behalf of Dr. Copeland of the Board of Health, condemned the proposition as having been proven impractical from a sanitary standpoint.

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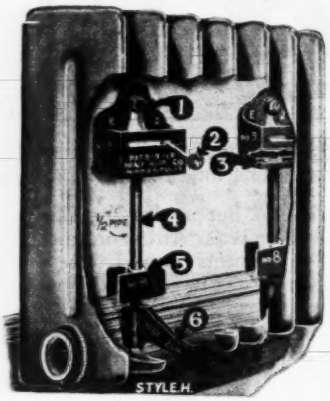

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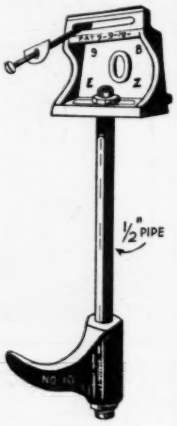

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Massachusetts

Boston and Vicinity.

The United States treasury department is to make improvements in the Quarantine station at Gallups Island, Boston Harbor, estimated to cost $150,000. A considerable part of this sum will be expended for heating and plumbing work. The work is under the direction of the supervising architect of the treasury department. Frank S. Davis, manager of the Maritime Association, of Boston, will probably have local supervision.

Plans have been completed by Blackhall, Clapp & Whittemore, for a six-story brick and stone office building and store for the Kresge Company, at Tremont and Bromfield Streets, in the heart of the shopping district.

M. A. Dame & Son have been awarded the heating, and T. J. Murphy & Co., the plumbing contracts for the addition and alterations to the Charles Street jail for the city of Boston.

The commercial traveler will be interested to know that in The Bostonian, a new $10,000,000 hotel to be built in Boston, his comforts and conveniences will be particularly looked after. There will be at least 100 rooms for the commercial traveler, all with outside light and good ventilation and each with bathroom containing the most modern fixtures. An interesting detail is that each one of these rooms is to be named after some man who has contributed by his effort to the establishment of New England's commercial and industrial success, and it is proposed that a picture of the person after whom the room is named shall be placed in the room together with statement of the service which he rendered to his community.

D. Carlin & Co., 133 Cambridge Street, have the plumbing contract for the block of nine stores and offices to be erected at 533-541 Columbia Road, for Morris Rudnick. Berch & Caddigan, 130 Shawmut Avenue, have the heating contract. The block will cost $60,000.

The city of Boston is to build a new engine house on East Street, bids for which will close about Feb. 15. James T. Ball, 60 Bristol Street, is architect. The building will be of brick, three stories, 33x68 and will cost about $40,000.

The Lincoln Realty Co. has had plans prepared by George Nelson Jacobs, 9 Hamilton Place, for a 10-story office building which will be erected at once on Lincoln Street. Cost, $350,000.

The Peterboro Realty Trust, Room 801, 18 Tremont Street, will soon award contracts for the construction of a 50-apartment house on Jersey Street, 5 stories and basement, brick, semi-fireproof, cost $200,000.

Michael T. Kelly, Blackstone Street, has been awarded the plumbing and heating contracts for three new single family houses at 15 and 17 London Street and 5 North Margin Street, each costing $7,000.

M. H. Myers, 9 Compton Street, has the plumbing contract for the new building for stores and offices at 76 Dover Street, and for remodeling at 454 Tremont Street.

The plumbing contract for the remodeling of the office building at 111 Summer Street, has been awarded to Edward L. Driscoll. He will also install the plumbing in the new office building at 77 Bedford Street.

Carmelio Sapienza is to erect a modern store, with offices, etc., at 304 Norfolk Street, at a cost of $98,000. No contracts have been awarded.

John J. Vogel, of the Roslindale section, has the heating and plumbing contracts for two one-family dwellings, one to be erected at 60 Samborn Avenue and the other at 61 Tyndale Street.

J. P. Shaughnessy, of 1732 Center Street, has the contracts for plumbing for the new two-family houses at 136 Manthorne Road and 15 Parkvale Road.

Bids have been asked for the new clubhouse of the Woodland Golf Club at Auburndale. The structure will be of brick, two stories and basement, 156x67, with locker rooms and shower baths. Ritchie, Parsons & Taylor, of Boston, are architects.

Henry Lewis Johnson, of Boston, is in charge of plans for the Printing Crafts Building Corporation's new building, to be erected early in the spring in Park square in which a large number of printing companies and allied concerns, illustrators and engravers, will be located. Bids will soon be requested.

James S. Cassedy, of Cambridge, has been awarded the plumbing and heating contracts for a residence to be erected for P. W. Carroll, of Hyde Park at Wellesley Hills.

E. W. Stearns, of Arlington, has the heating and plumbing contracts for a dwelling to be erected for Frank Jackson at 161 Washington Street, Belmont.

Mackie & Abbie have awarded the heating and plumbing contract for a residence on Florence Street, Brockton, to A. E. O'Toole.

James A. Tuck, architect, 34 School Street, Boston, is drawing plans and will award contracts for a four-family steam heated apartment house to be erected on Beach Street, Revere, for James Judson.

A. S. Kellogg, 89 Franklin Street, Boston, is the heating and ventilating engineer for the new eight-room elementary school, to be erected at Fall River, at a cost of $125,000.

John F. Johnson & Co., 231 Central Street, Fall River, has been awarded the heating and plumbing contracts for the $100,000 church and chapel of St. Michael's Catholic church of that city.

Alfred S. Kellogg, 89 Franklin Street, Boston, is the engineer for the tuberculosis hospital, to be erected by the city of Fall River. The building will be of brick, fireproof, two stories, and will cost $750,000.

The Frank Irving Cooper Corp., of Boston, has prepared plans for a two-story brick elementary school, for the town of Gardner, to cost $125,000.

Coolidge & Shattuck, architects, Ames Building, Boston, will have charge of the erection of a three-apartment house in Brookline, for Howard T. Mann, 17 Warwick Road, Brookline. Three garages to go with the property will be of brick and will also be heated. Contracts have not yet been awarded.

Architects Smith & Walker, of Boston, are preparing plans and will have charge of the work of reconstruction and alterations to the plant of the Danvers Bleachery in Peabody.

An apartment house for 33 families is to be erected by Frank S. Harlow at the corner of Avon Hill and Linnaean Street, Cambridge, at a cost of $150,000. Plans by Architect Hamilton Harlow, of Boston, are now ready for figuring.

J. J. Mullaney & Co., of Lowell, have the plumbing contract for extensive alterations to a large business block recently purchased by the Appleton National Bank.

Ralph Testa, architect of 220 Hanover Street, Boston, is to erect a residence for himself at a cost of $18,000 in Belmont.

Mrs. Edith K. Morash, 24 Oakley Road, Belmont, will build two two-family houses on Trapello Road, Belmont.

Hugh McDonald, 7 Iroquois Street, Roxbury, is planning the erection of two residences on Pequosette Road, Belmont.

Frank C. Lewis, 8 Creek Square, has the plumbing contract for the new building for a rendering plant for Chamberlain & Co., at 24 South Market Street and 20 T Wharf.

Morris Bronstein, of 68 Charlesgate East, has bought a large tract of land in Audobon Road, upon which he will erect a five-story brick and stone apartment house to contain 40 apartments. Plans are already in preparation and bids will be invited soon.

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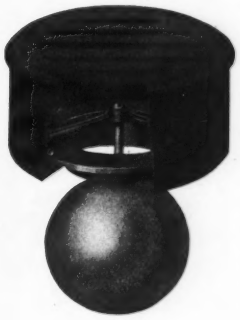

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Worcester.

Dr. Edward Cooper has awarded the contract for installing plumbing in the apartment block, which he is to bulld at 15 Midland Street, to A. Burlingam Co., Worcester.

Edward C. Viner, of Worcester, has been awarded several plumbing contracts for new residential work. Among them are new dwellings on Sherbrook Avenue, apartments on Sherbrook Avenue, and a dwelling at 15 Williams Street.

Tucker & Rice have been awarded the plumbing contract on the new Unitarian church at Worcester.

Springfield and Vicinity.

The plumbing contract on the new factory of the Olmstead Quoaboag Corset Co. at Springfield has been awarded to W. J. Hyland Manufacturing Co. of that city.

Plans have been completed and are ready for figuring for a modern department store for Albert Steiger at 161-167 Bridge Street. Contracts will be let by owner. The structure will cost approximately $50,000.

Activity in new residential construction is reported in Springfield and a number of plumbing contracts have been awarded for the work, most of which will start the latter part of next month as soon as the ground opens. Arthur La Plante has the plumbing contracts for houses at 67 and 69 Central Street and at 43 Walnut Street; W. H. Gay has plumbing contracts for houses to be built at 101 Belvidere Street, 34 Pershing Street, 36 and 38 Ashmont Street, 275 and 277 White Street, and 30 Narragansett Street; The Lincoln Co. has the plumbing contract on the new building of the Springfield Rescue Mission at 36 Willow Street; Beaumier Bros. have plumbing contracts for residences, 15 and 17 East Alford Street and 37 Highland Street; T. J. Ryan has similar contracts for 71 Walnut Street and a new house on Kenyon Street; while Thomas E. Dowd, James F. Walls, F. D. Stocks, Oliver & Howland Co., James A. Donovan, Nelson O. Bliss and the J. J. Cotter Co. report new plumbing contracts signed for one new house each to be started in the early spring.

Plans are ready for figuring for a two-family house to be built by Leon M. Coiteux on Rittenhouse Terrace.

Two dwellings are to be erected by Shoughrue & Ripley on Rockland Street, for which general contracts have been let but sub-contracts have not yet been awarded.

Other Cities in the State.

A. L. Banks, of Belmont, is to build a new residence in that town at a cost of $8,000. Plans will soon be ready for figuring.

Howard Pursey, of Frederick Avenue, Medford, has had plans drawn and they are now ready for figuring, for three two-family houses on Frederick Avenue.

The New Bedford City council committee on Public Property with Mayor Remington, Building Inspector Joseph Gibbs and others, are inspecting public comfort stations in nearby cities with a view to erecting a similar structure in the center of the business section of New Bedford in the near future. Plans will be drawn as soon as the inspections are completed. The city is also to renew the plumbing in some of the fire stations and schoolhouses.

James R. C. Duffus, of Ludlow, who is a candidate for appointment to the Board of Health in that town, has offered, if appointed, to act as plumbing inspector for the board without compensation.

Architect Charles G. Loring, of Boston, has completed plans for the new high school at Stoughton, and the general contract will be awarded to Willard Hanson. The structure will be of brick and limestone with a frontage of 122 ft. There will be a gymnasium with showers and baths.

Residential construction in Taunton, for which plans have been completed but contracts not awarded, includes a $5,000 house for Agnes Lagace at 183 Whittenton Street, a $5,000 house for N. N. Crapo at 8 Crapo Street, a $7,000 residence for F. V. Brown at Broadway and Madison Street and a $5,000 house for C. O. Baker, Winthrop Avenue.

The Abbott Worsted Co., of Westford, will erect a new mill 215x90, three stories. Charles T. Main, of Boston, is the engineer.

The Yale Knitting Co., of Malden, is to build a large addition to its plant from plans by Lockwood, Greene & Co., of Boston, three or four stories. The plans will be ready for figuring about the middle of March.

A new mill will be erected at Hoyloke by William Skinner & Sons, four stories, 200x80, to cost $100,000, with toilet facilities on each floor.

Alterations to cost $10,000 and including the installation of new plumbing, are to made to the Westfield Town Hall. Malcolm B. Harding, of Westfield, is the architect.

Six two-family houses are to be started within the next few weeks at Arlington by the Realty Mutual Trust, 27 Oak Avenue, West Roxbury. F. A. Cundari, 88 Broad Street, Boston, prepared the plans.

Two wings are to be added to the Sisters of Mercy Convent at Portland, at a cost of $120,000. Each wing is brick, 146x28, three stories.

Additions are being made to the plumbing and heating establishment of Arthur L. and John W. Knight on Main Street, Westbrook. One addition will be erected at the rear of the present building while an additional story will be added, and the offices of the concern, now on the street floor, will be moved to the second floor of the building, giving additional showroom space on the front of the street floor. The plumbing workrooms will be in the new part at the rear of the showrooms.

The Turner Center Creamery Co., Kittery, is to erect a new plant at a cost of $60,000, for which plans are now being prepared. No contracts have been let but it is planned to start building operations in March or April. The company's engineers are preparing the plans.

The heating and plumbing contract for the new Masonic Building at Gorham have been awarded to Knight Bros., of Westbrook. The building will be ready in spring as work is to be pushed forward during the winter.

G. H. Severance, at present with Dyer & Rounds of Bangor, has leased a store in Pittsfield and will open a plumbing and heating business in that town about the middle of the month. He has several Pittsfield contracts on hand.

Bridgeport.

The Board of Education of Bridgeport plans to expend about $25,000 on repairs and improvements to the heating and plumbing systems in the older schoolhouses of the city, this year.

Herbert F. Stenstream, of the plumbing firm of Stenstream & Russell, Park Avenue, Bridgeport, has been appointed trustee of the estate of Fred W. Douglass, plumbing and heating contractor, North and Madison Avenues, Bridgeport, who recently filed a petition in bankruptcy.

Meriden.

The H. Wales Lines Co., 134 State St., Meriden, has been awarded the general contract for the new stone library building to be built at the Connecticut College for Women, in New London. The structure will be of stone with two stories and basement. C. A. Platt, 101 Park Ave., New York, is the

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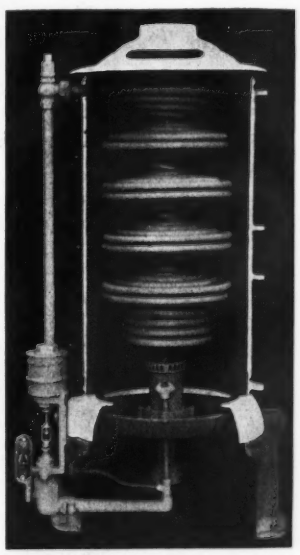

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architect. The general contractors will award the plumbing and heating contracts.

Joseph B. Ford, plumbing and heating contractor, 32 Pratt Street, Meriden, is completing the large new building for his business on Pratt Street. Mr. Ford will occupy the ground floor with his office and plumbers' shop, and the second floor will be used as an auditorium and lodge room.

Other Cities in the State.

Harold C. Lovell, president of the H. C. Lovell Co., plumbing and heating contractors in Stratford, was elected to membership in the board of directors of the Stratford Trust Company, at the recent annual meeting of the stockholders.

F. R. N. Geddes, 105 Bank Street, New York City, has the contract to install a fresh air ventilating system in the building of the Security Insurance Company of New Haven, 115 Elm Street, New Haven. The system to be used is one that provides for the injection of fresh air into the building just below the ceiling, permitting it to filter out through the building, thus furnishing a constant supply of fresh air.

Benjamin Harris, 268 Atlantic St., Stamford, real estate builder, is planning the construction of twenty-five or more residences at Shippan Point, Stamford, during the comnig summer. Architects Emmons & Abbott, Washington Bldg., are now preparing plans for them. The houses will be constructed of brick, frame and stucco, and all will have the latest conveniences.

Estimates will be taken soon for the plumbing and sanitary work in connection with the construction of the new $100,000 Bathing House and Pavillion at Ocean Beach, New London, by Arthur G. Rudd, of Ocean Beach. The structure will be of wood, on concrete piers, and will measure 140 by 170.

Andrew K. Stohl, a plumber of Pierpont Street, Waterbury, has filed a petition in bankruptcy with liabilities of $5,298.90 and assets of $1,239.47.

J. H. Alvord has sold the business home of his long established plumbing and heating business on Main Street, Winsted, to motion picture promoters of Norfolk, who plan to remove the present building and erect a theater in its place. It is one of the most central locations in the town. Mr. Alvord has purchased property at Westmore Avenue and Walnut Street upon which he plans to erect immediately a mercantile block with offices above the first floor. He will occupy one of the stores with his own business.

Three residences are being erected in Torrington and the plumbing contracts have been awarded as follows: On a two-family house at 104 Main Street to W. H. Morrison; on a residence at 210 South Main Street to the New England Plumbing Co., and on a house at 271 Main Street to S. J. Serkey.

James Pagnam, for some years a member of the firm of Pagnam & Heslin where he was associated with James F. Heslin, will soon open a plumbing and heating establishment of his own at 93 Quinnipiac Street, Wallingford. The firm of Pagnam & Heslin was dissolved several months ago.

Officials of the State Board of Health have been in conference with officials of Hartford and of the county with a view to improving the sanitary conditions at the Hartford county jail. It is expected that recommendations will be made for additional and modern plumbing.

"Plumber Poet" Celebrates Eightieth Birthday.

John Troland, Norwich, prominent master plumber and widely known as a poet, observed his 80th birthday Jan. 15. He received, in addition to the customary felicitations, a congratulatory letter from a group of world war veterans who served overseas. Mr. Troland has written many poems which have been published in many of the leading magazines, and shortly before the World War a number of these were collected and published in book form. It appears that some of the volumes fell into the hands of the boys in the trenches and a demand was sent back for more.

California

San Francisco and Vicinity.

With the colder weather still hanging on throughout the bay-cities, the plumbing business is beginning to rest on a more normal basis. The period of uncertainty, due to the slight reductions in the journeyman plumber's wage scale, is almost over and as a result business is once more acquiring a rosy hue. There is a large number of new buildings in the course of construction throughout the city as well as in Oakland and Berkeley, across the bay from San Francisco. It is hard to estimate how much more work is ready to proceed, but it seems safe to say that it will keep the building trades busy for many months to come.

Los Angeles.

Harry H. Belden has purchased twelve lots on Lorraine Boulevard, between Second and Third Streets, and will erect residences on each lot costing from $25,000 to $30,000 each.

Holly-Angeles Building Co., 515 Lankershim Bldg., has had plans prepared and will erect a seventeen-unit Spanish style bungalow court and an eight-unit garage near Fourth and Vermont Avenue, at a cost of $52,000. Bids are desired on all sub-contracts.

S. H. Brown, 414 Lankershim Building, is preparing working drawings for a $35,000, two-story residence and double garage in Windsor Square.

Ralph E. Homann Co., 3720 S. Park Avenue, was low bidder at $5,747, for remodeling the basement and installing new plumbing in the Bridge Street school.

The Lynch Cannon Co., Salt Lake City, Utah, has been awarded the contract at $210,050, for erecting a new freight depot and office building on Hunter Street, for the Union Pacific Railway Co.

Architect Richard D. King has prepared plans for a two-story, reinforced concrete, cold storage building at Twenty-first and Los Angeles Streets, to cost $20,000.

John C. Austin is preparing plans for remodeling the cathedral at Second and Main Streets, for the Roman Catholic Bishop, at a cost of approximately $75,000.

A new Congregational church is to be erected in Glendale at Central Avenue and Wilson Streets, at a cost of $85,000.

A group of ten flat buildings is to be erected at Passmore and Rosewood Avenue, from plans prepared by Architects Hunt & Burns, each building to contain four flats, with from five to seven rooms.

P. W. Croake is erecting a two-story store and office building at Seventh and Rampart streets from plans prepared by Thomas Franklin Power. The building will contain eight stores and two offices.

H. M. Halderman is building a brick block 150x60 ft., at Santa Monica and Sweitzer avenues. The block will contain nine stores. E. L. Mayberry is the architect.

Howe Bros. were low bidders, at $39,473, for installing plumbing, heating and vacuum cleaning systems in the new communicable disease building at the county hospital. Other bids were submitted by Arthur Hess, $40,400; and Lowman Bros., $40,989.

Milwaukee Building Company, 315 Wright and Callender Building, has prepared plans and has the contract to construct a two-story, ten-room residence on Fremont Place for Geo. A. Hart. The residence will cost $50,000.

G. C. Sutton has been awarded the contract for installing plumbing in the new Vine Street school building, on his bid of $6,330, and J. Hokom secured the heating contract at $5,199.

Plans have been completed for two class A buildings, for the Hollenbeck Home on Boyle Avenue. They will be two stories each, with basement.

Reliable Sanitary Floor Drains

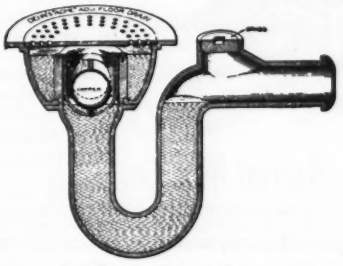

Fig. 7—Patented

Dehn's *"AcmE"* Deep Seal Continuous Pipe Trap Floor Drain with Automatic Back Water Valve.

Approved and recommended by all Departments of Health and Sanitary Engineers. These have stood the test for many years.

Beware of the Infringer and Imitator with his contraptions.

We manufacture a full and complete line of Floor Drains for every type of installation.

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Compound Injector & Specialty Co.

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Originators, Designers and Sole Manufacturers of

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Plumbing "DOPE"

Trade Evil **2**

The public look upon the negative side of things. They don't fully consider the *benefits* of the Plumber's service. No sympathy.

Are Women Sentimental Buyers?

Does the Plumber know how to sell to this 90 per cent buyer of home purchases? *Write today* for the Humphrey "12 in 12" Better Business Plan which now shows you the new way to sell larger plumbing installations—easier, quicker! *Acknowledged by plumbing authorities as a history-making plumber's promotion plan.*

HUMPHREY COMPANY

Merchandising Bureau, KALAMAZOO, MICH

BARRETT SEWER TIDE AND BACK WATER TRAP

Guaranteed to Live up to Every Claim made for it

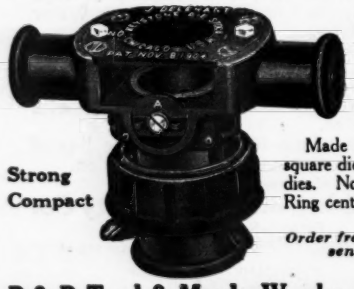
The Barrett Trap is so designed and constructed that it cannot fail to operate properly. Opens easily for outward discharge and closes positively against metal seat. Inlet is much higher than outlet, making a positive flush.

A satisfactory trap in every respect.

Ask for descriptive matter

James Barrett Mfg. Co. 115-121 Pearl Street Boston Mass.

The Keystone Die Stock



is guaranteed to cut straight threads

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Made for Armstrong and square dies. Easy to change dies. No bushings to lose. Ring centers pipe.

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If your jobber hasn't our goods in stock write us, giving his name.

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Eastern Representatives: Kessel & Muller, New York
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Thousands Operating Successfully!

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THE DICKEY SEPTIC TANK SEWAGE DISPOSAL SYSTEM

comes in sections ready to be quickly joined together. No forms required. The Salt Glazed Clay material is not affected by acids or decay.

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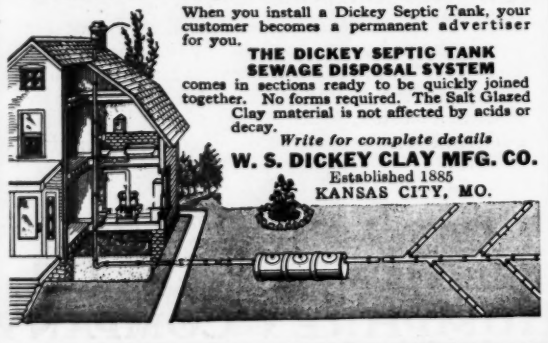

W. S. DICKEY CLAY MFG. CO.
Established 1885
KANSAS CITY, MO.

A two-story brick school building, to cost $72,000, is to be erected at Sawtelle on the Woodrow Wilson school site. The building will contain five class rooms, offices, and an auditorium. William Barber, architect.

A brick building to contain nine stores, is being erected at Santa Monica Boulevard and Sweetzer Avenue. The building will have a frontage of 150 feet with a depth of 160 feet. E. L. Mayberry is the architect.

Ley Bros. have prepared plans and have the contract to erect a twenty-room, frame and plaster flat building at 232 S. Alexandria Street, for George Lederly.

Plans have been prepared, and work is being done, by the Wesco Construction Company, on a five unit, bungalow court, on South Olive Street, for Mrs. Bessie Crystal.

E. L. Ellingwood has been commissioned to prepare plans for a heating and ventilating system for the new Roosevelt high school building. An appropriation of $324,000 has been made for the building complete.

Dr. C. L. Hunt is erecting a two-story brick store, office and apartment building on Vermont Avenue and Jefferson Street. The building will contain three stores, three offices and two four-room flats; cost, $20,000.

L. L. Smith, of Los Angeles, has prepared plans for the new hotel to be erected at Long Beach, for the Park View Land Company. The structure will be of reinforced concrete with brick facing and terra cotta trimming, twelve stories. It will contain three hundred and twenty-four guest rooms most of which will have private baths. The building will cost approximately $800,000.

Other big improvements for Long Beach are the construction of a new school building to begin early in 1922, which will cost more than $1,000,000 and the erection of a twelve-story, $1,000,000 National Bank Building.

Washington

Seattle.

Work will be started shortly on the proposed new store building to be erected at Second Avenue and Pike Street, for William E. Grimshaw, from plans prepared by Architect and Engineer Henry Bittman, Securities Building, who will supervise the work. The structure will be two stories and basement, costing $75,000.

The Davis Plumbing Co., 4114 14th Avenue N. E., received the contract for plumbing in the store which is being remodeled at 212 Pike Street for the White Lunch Company.

Contracts for plumbing and heating in the Columbia School were recently awarded by the Seattle School Board, as follows: Heating to the McMahon Plumbing & Heating Co., 734 Pine Street, for $22,320; plumbing to Dupar-Blythe Co., 712 Pine Street, for $11,482.

Catholic parishes in the Seattle diocese plan the expenditure of $457,500 in the erection of church and school buildings. Two $100,000 buildings are included in the list, one of these being a central unit to the Briscoe Orphan Boy's Home at Orillia, for which architect's plans are completed. Another is a 20-room school structure costing $100,000 to be erected in Ballard. Other structures planned are a $50,000 school building on Queen Anne Hill for St. Ann's Parish; a $75,000 brick veneer church on Queen Anne Hill; a $50,000 school between 42nd Avenue, South, and Rainier Avenue; a two-story brick school building costing between $50,000 and $100,000 for St. Mary's Parish; and a $30,000 parochial school for St. Margaret's Parish at 14th Avenue West, and West Dravus Street.

Plans are nearly completed and bids will be called soon for the proposed new school building at Tigard, Ore. Structure will have a gymnasium and auditorium with six additional class rooms.

THE PROVINCE OF ONTARIO.

Toronto.

J. H. Antliff has the plumbing contract, and Pease Heating Co., Ltd., has the heating contract on the Presbyterian church on Belsize Avenue.

Ross Belyea will install the plumbing in three stores and apartments now being constructed for W. A. Price.

T. B. Smyth has the heating contract for the addition to the office building of the Merchants Fire Insurance Co.

J. H. Dougherty, Mimico, has both plumbing and heating contracts on a residence for Leachman & Miller.

Wm. Howard & Co. have the heating and plumbing contracts on a new residence being built for W. R. Worthington. C. Davis has the plumbing contract, and Pease Heating Co., Ltd., the heating contract on a residence for J. H. Henderson.

R. J. Ritchie will install the plumbing system in two residences being built for Wm. Davidson.

McKeown Bros. have the plumbing contract, and R. Steen has the heating contract on W. T. Bennett's new residence.

Other Cities in the Province.

Considerable discussion took place in Windsor regarding an added clause to the plumbing by-law stipulating that all journeyman plumbers commencing work in the city should pass an examination before an examining board consisting of the plumbing inspector and several others to be selected from the master plumbers. Mayor Wilson objected on the ground that the board would mean further expense for the city and that the plumbing inspector was capable of examining plumbers satisfactorily. A scale of fees, the maximum of which was $1, was fixed for the issuance of permits under the plumbing by-law.

The Border Utilities Commission of Essex is making another attempt to induce Windsor and Walkerville to become partners in a filtration plant to serve municipalities within jurisdiction of the commission. It is asserted that thousands of dollars can be saved each year by such a plan.

The city of Chatham has decided to place before the ratepayers a by-law asking for $600,000 for a water supply system. It will take a year to secure all the data on the question and in the event of the by-law passing the electors it will be two or three years before the system will be ready for use.

The town council of Napanee will shortly call for proposals for the installation of a hot water heating system for the council chamber and offices and a hot air system for the balance of the town hall.

BRITISH COLUMBIA.

Vancouver.

But little change in the plumbing and heating situation is reported by the local trade. This slackness, however, is, for the most part, seasonal, as matters are awaiting the opening of the building period.

As yet no steps have been taken by either the employers or workmen in regard to the wage agreement which expires in April. It is stated, however, that negotiations will likely be opened soon so as to avoid, if at all possible, any waste of time when the building season opens.

The city plans to spend about $350,000 on water mains in the near future.

Leading firms state that at the present time there is practically no work on new buildings being carried out. What little activity there is, is confined almost wholly to repairs and replacements.

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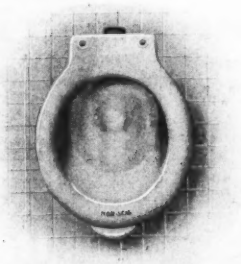
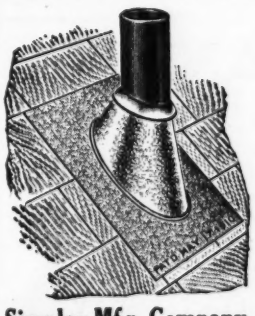
CHICAGO
Manufacturers
Plumbers Lead Goods
Prompt Deliveries Lowest Prices


Top View "MOR-SEAL"
THE CLEANER CLOSET
Illustrating in a clear distinct manner the complete absence of soiling surface in the "MOR-SEAL" closet.
Note the complete absence of the Soiling Hump on upper trapway also the large water surface.
It is Cleaner.
Ask your Jobber for it.
Made of Castex Whitest Vitreous China.
CHICAGO POTTERY CO.
1924-40 CLYBOURN. AVE. CHICAGO. ILL.

"HAAS" Water Closets
are high grade, insuring maximum service and minimum expense.
PHILIP HAAS CO., DAYTON, OHIO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Every Flashing Adjustable
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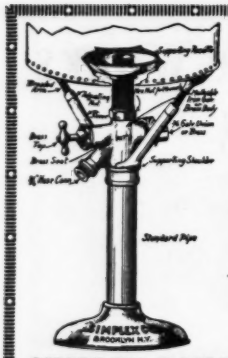

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Stronger, gives larger circulating opening than cast iron stands.

Will carry twenty sizes of boilers. Supporting arms easily attached to all sizes.

Adjustable to any height.

The SIMPLEX costs less in labor, saves leaks—no place for dust or vermin to collect.

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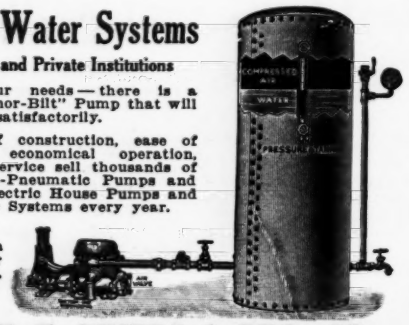
Private Water Systems

For Public and Private Institutions

Tell us your needs—there is a MYERS "Honor-Bilt" Pump that will meet them satisfactorily.

Simplicity of construction, ease of installation, economical operation, dependable service sell thousands of Myers Hydro-Pneumatic Pumps and Cylinders, Electric House Pumps and Direct Water Systems every year.

Write for a copy of our Catalog No. HP20.



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"BRE HYGIENIC" SPRING SEAT

Just the seat for that office building or factory job. It has an adjustable spring tension. A spring shock absorber that takes all jar and strain from the bowl. A stop that keeps the seat from striking fixtures in back and a "BRE HYGIENIC" seat.

Get our special prices for your show room or window display.

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BRE MFG. CO.
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KEWANEE

Kewanee Smokeless Boiler is imitated oftener than any other boiler made. Yet some "wise folks" said a boiler could not be made to burn soft coal smokelessly.

That was years ago. Now Kewanee has proved it can be done.

KEWANEE BOILER COMPANY
Kewanee, Ill.

THE IMPORTANCE OF A PURE WATER SUPPLY.

(Continued from Page 268.)

This was the most important step taken to prevent the continued spread of the disease. Added safety was secured by abandoning the use of the vitrified pipe gravity line for delivery of water from the Garfield Avenue wells on October 27th, and by the re-construction of the lower end of this line using cast iron pipe which was placed in service for the delivery of water from the Zelle well on December 3rd. An added measure of safety was provided by placing in operation on December 11th, a liquid chlorine machine to treat the water pumped from the Garfield Avenue wells into the mains. Daily analysis of the water as delivered to the consumers indicated that after the disinfection of the supply was started, the water was safe for drinking purposes at all times.

Owing to the intensity of the epidemic, however, and particularly recognizing the results of the sanitary investigation, it was deemed advisable to place in effect other measures to prevent the spread of typhoid fever. The sanitary investigation revealed the existence of some 276 private dug wells, 126 private drilled wells and many cisterns throughout the city. The majority of these wells and cisterns were old and unused prior to the epidemic, but owing to the suspicion which was aroused regarding the public water supply, the people generally turned to private sources of drinking water supply. Accordingly, it was felt that some definite measures should be taken to protect the inhabitants of the city from disease which might arise from the use of such private supplies, as such supplies were in constant danger of contamination by the discharges of typhoid fever patients. Public warnings were given against the use of dug wells and springs and in addition, 100 dug wells and 37 cisterns were disinfected by applying to each one pound of hypochlorite of lime. This effectually prevented the use of such wells.

The sanitary investigation revealed the existence of 441 privies, the most of which were of improper construction. As it was thought that many of these had been used by persons suffering from typhoid fever infection, it was deemed advisable to attempt disinfection of these privies. Accordingly, each privy vault in the city was treated with approximately five pounds of hypochlorite of lime.

Particular emphasis was placed upon the disinfection of stools from typhoid fever patients and to facilitate this, a supply, of hypochlorite of lime in one-pound tins was secured by the city and distributed without cost to families in which cases of typhoid fever existed.

It was not known what effect the sewage from the city might have upon the population downstream from Salem and it was deemed justifiable to attempt disinfection of the sewage at the sewage treatment plant. For this purpose, a dry feed chlorine gas machine was installed to treat the settled sewage. The amount of chlorine applied was approximately five parts per million which was the maximum capacity of the machine. No bacterial results are available to show the efficiency of this treatment. On the Ohio River below the mouth of Little Beaver River are several communities in Ohio and West Virginia obtaining their public water supplies from the stream. Each of these communities was notified of the existence of the typhoid fever epidemic in order that they might take precaution in the treatment of their water supplies.

Pasteurization of the entire milk supply of the city was effected. Fortunately, a large milk depot had been established at Salem and was equipped with efficient pasteurizing machines making possible the treatment of the entire milk supply of the city. Regulations were also enforced prohibiting the leaving of milk containers at premises where

typhoid fever existed, and prohibiting delivery of containers to purchasers at groceries and other places selling milk. These measures continued in effect until the epidemic had subsided.

Prevention of the spread of the disease through contact is attributable to the efficient public health and private duty nursing service which was provided. Over 300 nurses responded to the general call for help, and as a result every patient in the city received daily nursing attention. Too much credit cannot be given to the nursing service for the prevention of the spread of the disease through contact and for the low mortality rate.

Inoculation was generally taken advantage of by the people. It is estimated that at least 4,000 persons were inoculated. These included all of the food handlers of the city.

Unusual medical service attended the treatment of this epidemic. The seventeen local physicians were assisted by three volunteer physicians from neighboring cities and six consultants. Dr. Henry A. Christian, of Boston, Mass., did most to accomplish the proper treatment of the cases to which must be attributed in a large measure the low mortality rate. Hospital facilities included five hospitals, four of which were improvised. The total capacity, 180 beds, was taxed during the peak of the epidemic.

Reccommendations Made to Prevent a Recurrence of the Epidemic.

The outstanding recommendations made by the State Department of Health to the city officials to prevent possibility of a recurrence of the typhoid fever epidemic relate to improvement of the public water supply system. The following were the principal items of advice regarding the water supply:

1. To continue chlorination of the water supply until improvements in the system could be made which would insure a safe water supply at all times.
2. To provide extensive improvements of the water supply system to insure an adequate water supply of good quality and pending the completion of such improvements to take the following steps:
3. To abandon permanently, the Garfield Avenue wells, requiring increase of the other sources of water supply.
4. To abandon permanently the vitrified pipe gravity line. This has been done.
5. To repair the cast iron pipe gravity line serving the Zelle well field.
6. To protect all wells from contamination by securely closing the tops of casings.
7. To abandon or make watertight the storage reservoirs at the main pumping station.
8. To require abandonment of unsafe private wells.

The foregoing recommendations have not been fully carried out to date but the city has learned its lesson and is taking steps to follow these recommendations fully.

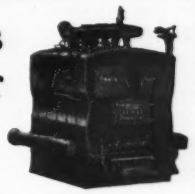
In addition, recommendations were made to the city that legislation be passed providing for the proper control of the use of the sewers of the city in order to secure the use of the same in accordance with the purposes for which they were designed. Progress has been made looking toward the carrying out of these recommendations.

In order to provide proper control of the milk supply, sanitary inspection of dairies by the city was recommended and continued pasteurization of the milk supply to the city until the epidemic had entirely subsided.

Lessons Learned from the Epidemic.

While the epidemic involved a great loss of life, money and efficiency, it produced facts the recognition of which will prevent the occurrence of other epidemics of similar cause. The outstanding fact is the necessity of proper construction and maintenance of public water supply systems. No city can afford to overlook this fact. All features of construction and maintenance of the water supply system

Pierce Smokeless Updraft Boiler



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Against Flooded Basements

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A perfectly reliable trap that automatically keeps out sewerage, gas and germs.

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The Signet is clean, sanitary, simple, durable and efficient.

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Cannot Overflow

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Clean-out device located at head of trap where obstructions above sewer pipe can be easily removed without clean-out tools.

Get an APEX, try it out—you'll be more than pleased.

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The Apex Supply Co., Inc., 203 E. State Street TRENTON, N. J.

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Therefore, some PLUMBER is the father of every leaky roof.

The Bullard Roof Flange

is acknowledged as the only PERFECT FLANGE by busy men who have made satisfying installations.

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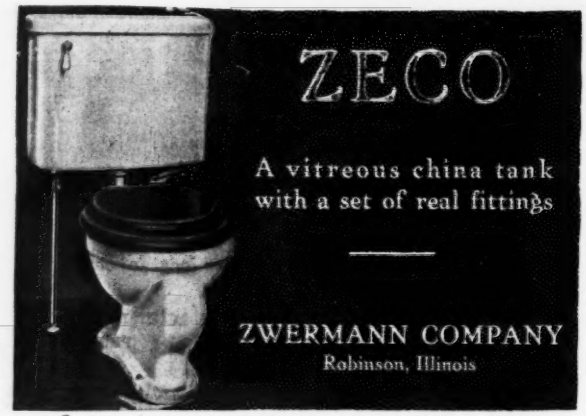

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The ONLY washer that will stand HOT as well as cold water.
Have you seen the new "BELL" Beveled Washer? If not, send for a sample.
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must be of highest standard to insure continuous safety. Another lesson learned is the necessity of analysis of the public water supply at regular intervals, regardless of its reputed quality. Had these lessons been learned and followed at Salem prior to the epidemic, it is safe to say that the epidemic never would have occurred.

As a result of the Salem experience, the General Assembly of Ohio, in 1921, passed a law intended to provide better control of public water supplies in Ohio. This law contains the following principal features:

1. It gives the State Department of Health general supervisory control of all public water supplies.
2. It requires the municipality or owner of the system to have analyses made regularly.
3. It prohibits dangerous emergency supplies and cross-connections between public and private water supply systems.
4. It empowers the State Department of Health to require changes and improvements in public water supply systems to insure safety.

It is believed that the proper enforcement of this law will accomplish much in the prevention of waterborne typhoid fever in Ohio.

Nolan Bros., Inc., is the new name of the old firm of Nolan Bros., plumbing contractors at 1320 New York Avenue, N. W., Washington, D. C. The firm has just been incorporated with W. D. Nolan as president, and a board of directors composed of: W. D. Nolan; M. P. Nolan; A. E. Nolan and R. J. Barrett.

Keyser & Roelke, plumbing and heating contractors at 141 West Patrick Street, Frederick, Md., have admitted W. A. Buckey into their partnership, and have changed the name of their business to Keyser, Roelke & Co.

Keefer Bros., Frederick, Md., have secured the contract for the installation of heating and ventilating systems in the Walkerville high school building, a $100,000 structure. The contract amounts to $6,000.

M. J. Sullivan of Lewiston, Maine, has been awarded the heating contract and J. W. Kerm & Co., of Auburn, Maine, the plumbing contract for the new $30,000 apartment house of F. M. Coffey at Lewiston.

Architects Angell & Swift, of Providence, R. I., are preparing plans and will award contracts for a summer residence at Westport, for Mrs. S. T. Hubbard, of New York City. It will be two stories, frame construction, and will cost $15,000.

Arthur B. Nims of the Nims Plumbing Co., Keene, N. H., has purchased a lot of land, 44x123 ft., at the corner of Federal and Lamson Streets, upon which he will erect a one-story building, which will provide a show room and plumbing shop on the street floor and work room in the basement. The site adjoins the Post Office building and is one of the most valuable locations in the business section of the city.

The I. Benson Leonard Co., of Wakarusa, has been awarded the contract for the installation of plumbing systems in two new school buildings at Elkhart. One of the buildings will be erected at a cost of $40,000 and the other at a cost of $60,000. The heating contracts on both buildings were awarded to Leon Beall, of Sturgis, Mich.

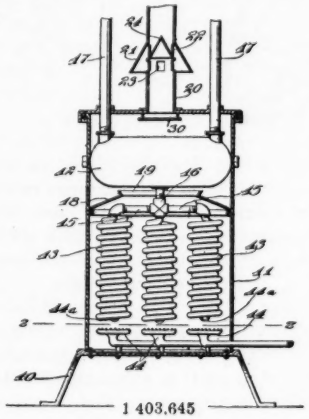
Meyer, Strong & Jones, 101 Park Avenue, New York City, have been selected as heating and ventilating engineers for the proposed First National Bank Building to be erected at Milk, Devonshire and Federal Streets, for the First National Bank, of Boston. The building will be a brick, fireproof structure, 11 stories, and will cost $2,000,000.

Mayor William L. Bradford, of Quincy, former president of the Massachusetts Master Plumbers' Association, presented gold watches to three Quincy boys for heroism in rescuing three other boys from drowning in that city recently.

Patents

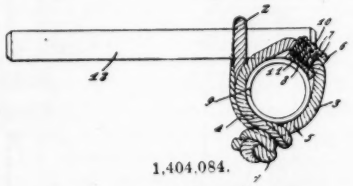
Plumbing Department.

1,403,645. Water Heater. Frederick W. Schoettle, Oak Park, Ill., assignor of one-half to Norman B. Lewis, Chicago, Ill. In a water heater, a casing, a water container located in the casing, a series of vertically positioned heating coils beneath the container and connected thereto, heating burners beneath the coils, and a heat retaining hood in the casing closing up the same between the bottom of the container and the top of the coils, said hood having a top opening located beneath the bottom of the container to direct the heat thereagainst.



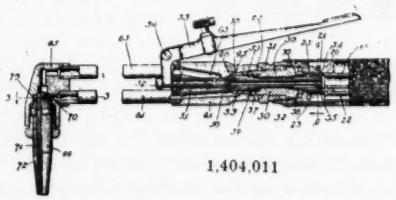
1 403,645

1,404,084. Pipe Grip. Thomas William Bell and Thomas Charles Rogers, Sistersville, W. Va. In a device of the class described, a flexible element provided at one end with an enlargement and supplied at its other end with an outer loop, the intermediate portion of the flexible element being formed into a gripping loop merging into a tightening loop



1,404,084.

engaged about one end of the gripping loop in advance of the enlargement; a grip through which the gripping loop passes; a projection on the gripping loop and wedged in the grip; and a lever extended through the outer loop.



1,404,011

1,404,011. Cutting Torch. Clarence J. Coberly, Los Angeles, Calif., assignor to California Burdett Oxygen Company, a corporation of California. A cutting torch comprising a head having a thread formed thereon, a primary pipe

Perfect Control of Hot Water Tanks

The Powers Regulator No. 11 is an economical means of controlling hot water service in all classes of buildings. Easy and inexpensive to install. Durable. Metal throughout. Self-contained and automatic. Let us explain the wide range of uses for which this regulator is adapted.

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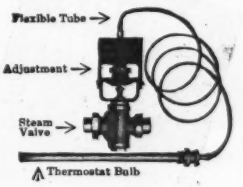

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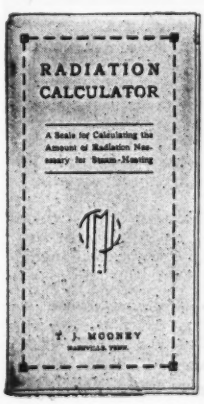
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Send us your name and address, and we will mail you one. Try it, then if you want to keep it, send us $1.25 after five days. We know you will want to keep it.

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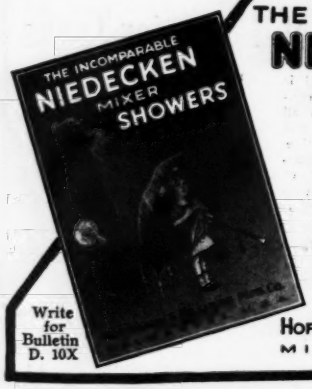

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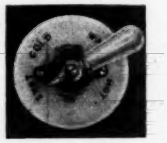

Write for Bulletin D. 10X

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All Sizes—All Grades

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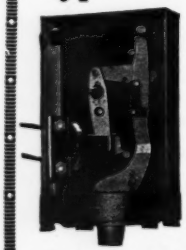
Type "R" Penn Pressure Switch



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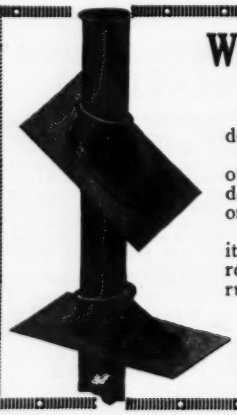

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Copper flashing so placed that it takes care of settlement of roof without breaking the "lead-run" joint on cast iron hub.

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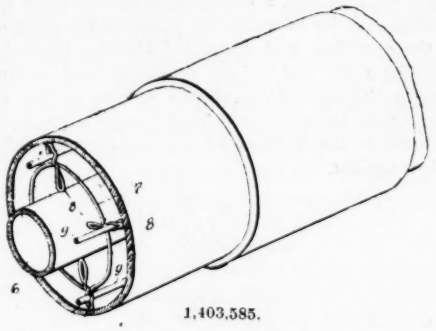
delivering gas to a conical cavity formed in said head, a secondary pipe delivering gas to a groove formed in the wall of said cavity, a body, a mixing tube secured at one end in said body and tapered at the other end to seat in said cavity, a nut having a thread engaging the thread on said head and engaging a shoulder formed on said mixing tube, a heating jet pipe secured in said body and connected through openings in said mixing tube with said primary and said secondary pipes, a cutting jet pipe connected through passages with said primary pipe, and a tip fed with gases from said heating jet pipe and said cutting jet pipe.

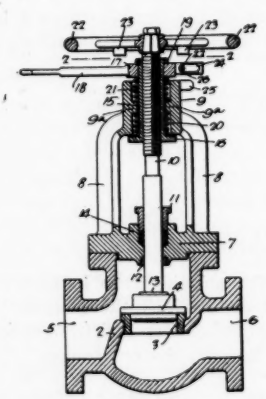


1,403,585.

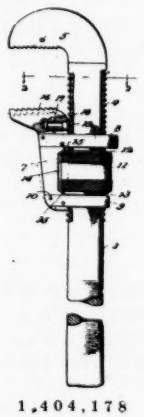
1,403,585. Form for Making Pipe. George A. Bonelli, Kingman, Ariz. A form for making reinforced pipe of plastic material comprising inner and outer lengths of tubes, sleeves for the joints between the lengths, spiders to hold the inner tubes centered and longitudinal reinforce rods.

Heating Department.

1,404,103. Valve. Philip Eckenroth, Philadelphia, Pa., assignor to Eckenroth Valve and Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania. The combination in a valve of a seat: a valve member for said seat; a stem connected to the valve member; a yoke on the casing having a tubular guideway provided with an internal annular rib; a nut rotatably mounted in said guideway and having abutments; sprints mounted between the rib and said abutments respectively; with means for turning the nut; and other means for turning the stem.



1,404,103



1,404,178

1,404,178. Pipe Wrench. Clarence L. Moore, Seattle, Wash., assignor to E. O. Edwards, Seattle, Wash. A wrench comprising a shank terminating in a fixed jaw, a movable jaw, straps connecting the movable jaw with the shank to permit a relatively lateral movement of the movable jaw, an adjusting nut threaded on the shank and operating between the straps to move the movable jaw lengthwise the shank, the movable jaw and nut being formed with co-operating inclined surfaces to force said movable jaw toward the fixed jaw in the pressure on the shank in operating on the work.

PATENT BILL PASSES HOUSE.

The Lampert patent bill, which has the strong support of engineering societies and industrial interests of the country, passed the House last week by a vote of 198 to 36, and efforts are now being made to get it through the Senate. The bill is now before the Senate Committee on Patents and it is hoped it will be put through and enacted into law at an early date.

While it was supported by a large majority in the House, the measure also was the source of considerable opposition at the hands of such members as Majority Leader Mondell and Representative Madden, chairman of the Committee on Appropriations. The general attitude of those opposing the measure was based on the ground of the necessity for so-called economy, and the contention that the legislation provided should be taken care of in the Lehlbach classification bill providing for salary adjustments throughout the Government service, but carrying less increases for Patent Office employees than allowed by the Lampert bill.

The Lampert bill provides for increases in personnel as follows: One law examiner; 26 assistant examiners and 21 clerks, aggregating 48 additional employees. Increases in salaries are made as follows: Commissioner of Patents, from $5,000 to $6,000; first assistant, from $4,500 to $5,500; second assistant, from $3,500 to $5,000; examiner-in-chief, from $3,500 to $5,000; solicitor, from $2,750 to $5,000; chief clerk, from $3,000 to $4,000; law examiner, from $2,750 to $4,000; principal examiners, from $2,700 to $3,900; first assistants, from $2,400 to $2,900, $3,100 and $3,300; and second assistants, from $2,100 to $2,500 and $2,800.

In order to cover the additional cost of conducting the Patent Office by reason of increased salaries, the bill provides an increase in the fees. Practically all of the work on a patent is done when the application is first made, and the initial fee is $15. The secondary fee upon the granting of the patent, under the present law, is $20. The Lampert bill raises the first fee from $15 to $20, and it is estimated that it will bring into the Treasury over $500,000 annually. It is declared to be the only piece of legislation in the way of wage increase that not alone pays for itself but will bring revenue into the Treasury. It was this feature of the bill that played an important part in destroying the argument of those who opposed it on the grounds of economy. The measure also gained strength because it omitted the Federal Trade Commission rider.

The extreme importance of the legislation has been repeatedly pointed out by its proponents in industry and engineering societies and was emphasized by Representative Lampert and others. He repeated figures heretofore given regarding the large number of resignations owing to the low salary scale and showed that during the calendar year 1919 the number of patent applications filed arose to over 76,000, exceeding by 19,000 the number in 1918, while 1920 exceeded 1918 by 24,000 patent applications, and 1921 exceeded 1918 by 30,000. Increase of work was also shown in the cash receipts of the Patent Office, which in 1918 amounted to $1,977,000; in 1919. $2,417,000; 1920, $2,680,000; and 1921, to $2,775,000 an increase of $800,000, or 40 per cent over 1918. Mr. Lampert said that the increase in work is overwhelming and that the Patent Office is hopelessly in arrears. There are now 59,000 patent applications and 6,000 trade-mark cases awaiting action, and with more than one-half of the force composed of untrained men, it was declared that the Patent Office cannot escape going further in arrears.

"Even with the relief afforded by the present bill," said Mr. Lampert, "it will take several years to build up the present force, with so many inexperienced men, into a stable, competent examining corps, able to make any material impression upon the arrears of work already piled up."

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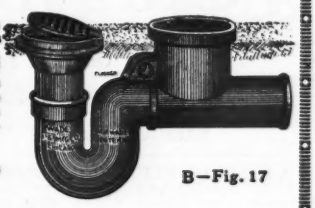
Easy to install. Makes good on any job.



B—Fig. 17

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Made with clean, smooth surface from high grade iron. Uniform in size.

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The full line of Riverside Products are described in catalog 9 — write for a copy.

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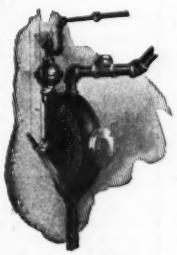

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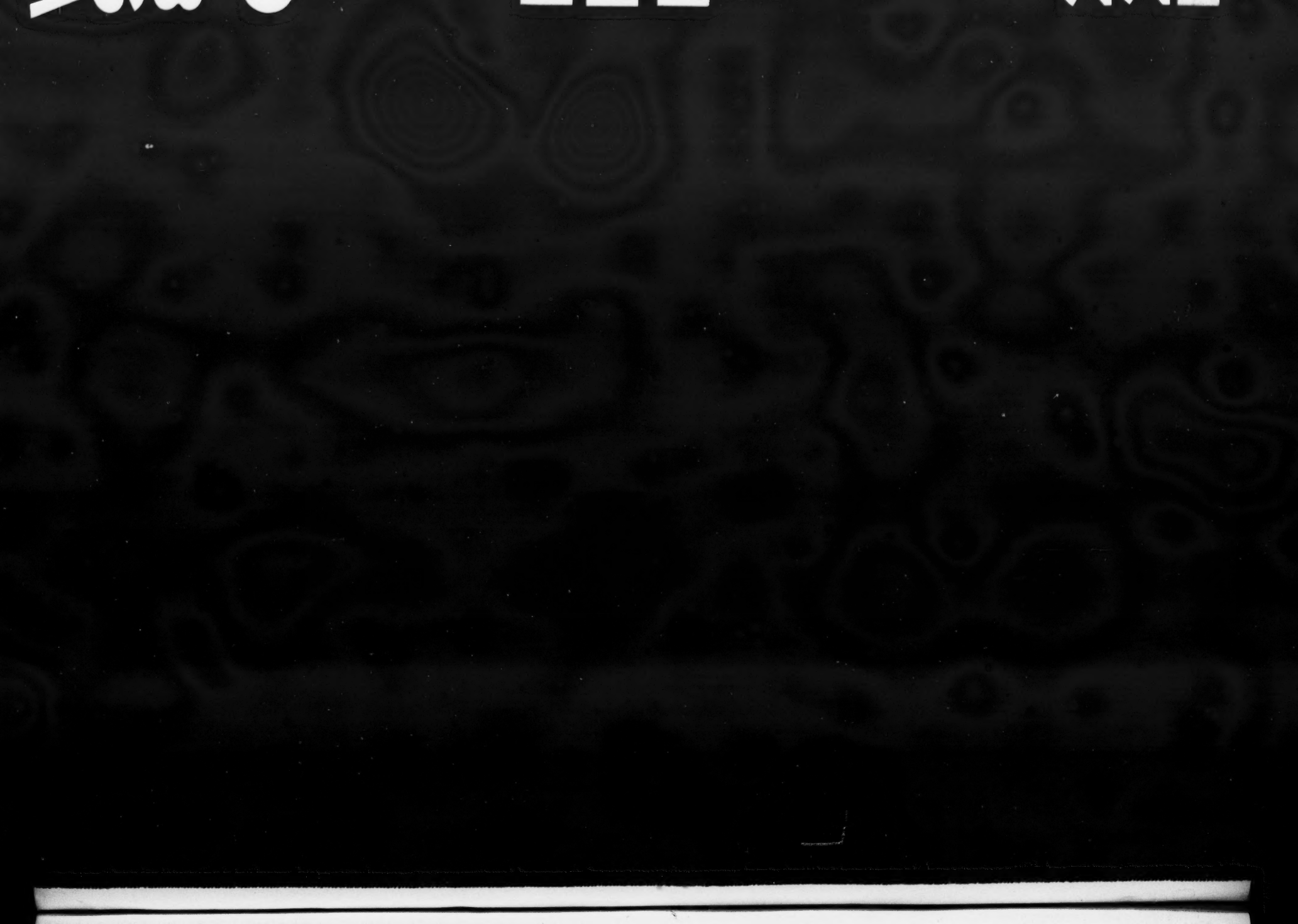
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